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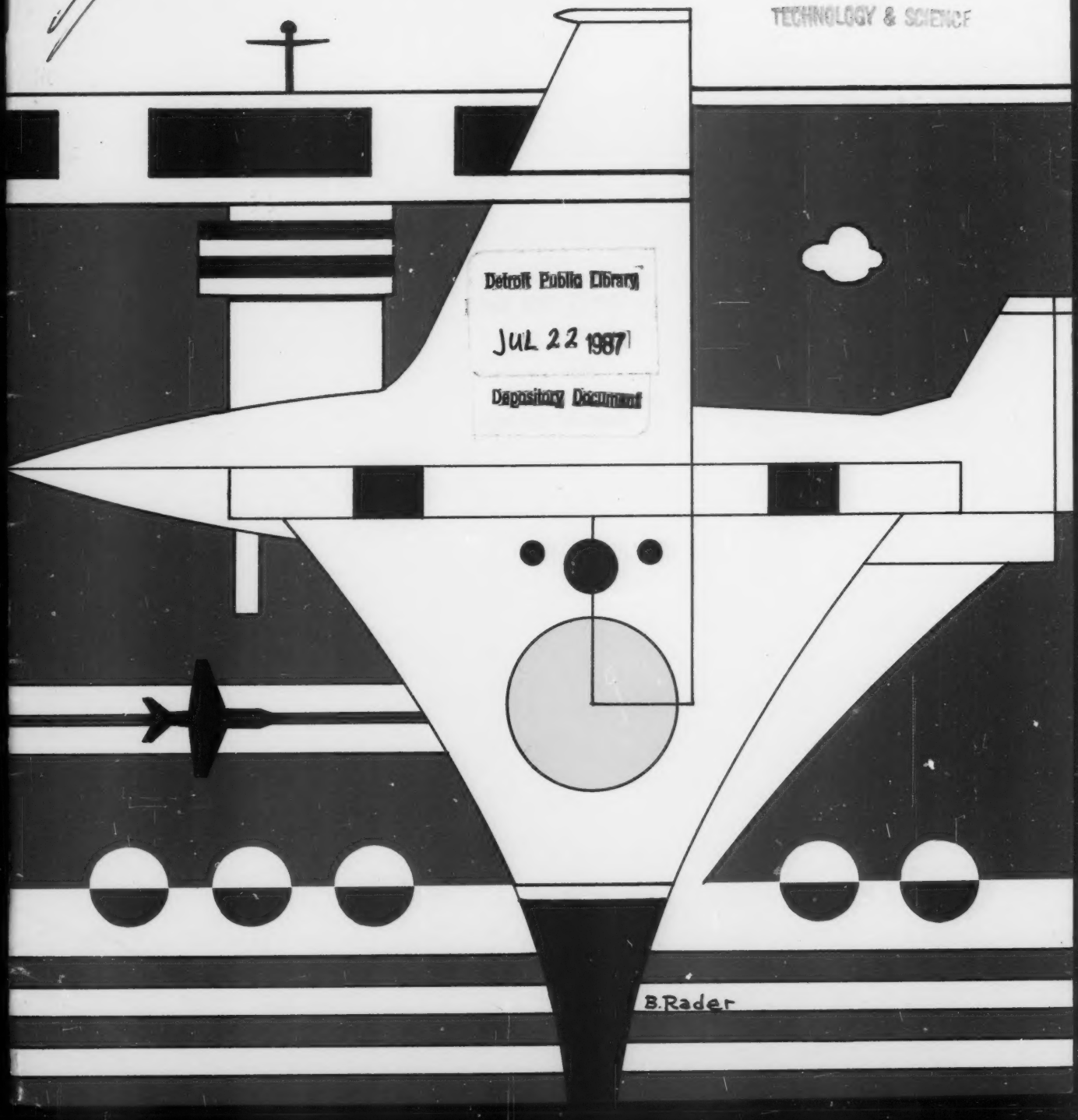

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1986 CNO Safety Awards

CNO "Readiness Through Safety" Award

COMNAVAIRLANT
CG FOURTH MAW

COMNAVAIRPAC
VF 24
VA 22
VFA 195
HSL 43
VF 126
VA 95
VAQ 134
VS 29
VAQ 129
HC 11
VAW 113
VP 9
HS 6
VRC 50

COMNAVAIRLANT
VF 11
VFA 131
VA 46
VA 55
VAQ 132
HM 12
VP 23
VS 32
VAW 120
HS 15
VX 1
VAQ 33
HSL 32

CG FOURTH MAW
HMM 744**
VMA 142

COMNAVAIRSYSCOM
Naval Weapons Center China Lake

*Second consecutive year
**Third consecutive year
***Fourth consecutive year

COMNAVAIRESFOR
VF 301*
VA 203
VAQ 209
VP 64
VR 46
HS 85

CNATRA
VT 6***
VT 7
VT 23
VT 27
VT 31

CG FMFPAC
HMLA 267
HMT 301
HMT 303
VMFA 323**
HMM 364

CG FMFLANT
HMM 261
HMM 263
VMFA 115
VMFA 333

Admiral James H. Flatley Memorial Awards

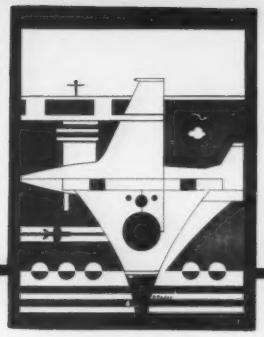
CV/CVN — USS *Forrestal* (CV 59)
LPH/LHA — USS *Tarawa* (LHA 1)

Admiral James S. Russell "Naval Aviation Flight Safety" Award

COMNAVAIRLANT

inside approach

Vol. 33 No. 1



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Approach is a monthly publication published by the Commander, Naval Safety Center. Address comments, contributions and questions about distribution and reprints to:

Commander, Naval Safety Center
NAS Norfolk, VA 23511-5796
Attention: Approach — Code 71
Telephone: Commercial (804) 444-7416; Autovon 564-7416; FTS 954-7416

ISSN 0570-4979. The contents should not be considered directives and may not be construed as incriminating under Art. 31 of the Uniform Code of Military Justice. Views expressed in guest-written articles are not necessarily those of the Naval Safety Center. The Secretary of the Navy has determined that this publication is necessary in the transaction of business required by law. It is funded and printed in accordance with all Navy publishing and printing regulations and approval of the Navy Publications and Printing Policy Committee. Second-class postage paid at Norfolk, Va., and additional mailing offices. Approach is available for sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.
POSTMASTER: Send address changes to APPROACH Magazine, Naval Safety Center, NAS Norfolk, VA 23511-5796.

When the Balloon Goes Up, So Does the Mishap Rate

By Robert H. Alkov, Ph.D., and Bud Baer

On a spring day in 1980, USS *Nimitz* was deployed in the Arabian Sea off the coast of Iran. Eight Navy RH-53D Sea Stallions whirled up from her flight deck and headed for a site in the Great Iranian Salt Desert. Their first stop, a refueling and rendezvous point, was five hours flying time away.

As they departed *Nimitz* on April 24, six Air Force C-130 Hercules tactical transports, one modified as a tanker, took off from an undisclosed base to join them in the desert.

The mission: Rescue American hostages held in Iran.

Although this was happening during an international crisis of the highest magnitude, it would prove that all deployments in which combat may be involved require not only substantial courage but skillful planning and execution. In an intensified atmosphere with much at stake, safety may take a back seat to mission accomplishment.

Some 80 miles into Iranian airspace, one of the helos was forced down by rotor blade trouble and landed in the desert. The crew abandoned the stricken helo and was picked up by another helicopter which continued the mission.

Halfway to the rendezvous point, the remaining seven RH-53Ds flew into a dust storm, which had not been forecast by military meteorologists. Spring storms appear unpredictably and with great force in that part of the world.

After flying through the storm without difficulty, the helicopters ran into a second, larger storm — a howling, swirling dust cloud 200 miles wide and 6,000 feet high. To avoid radar detection, they had to descend. To conserve fuel, they did not fly around the storm.

As they groped their way through the storm, a second mishap occurred. The navigation and flight instruments on one of the seven remaining helicopters failed, probably as a result of the dust. From all indications, none of the helicopters on the mission had dust filters. The pilot, weighing the deteriorating weather and the diminishing chances of safe flight, decided to return to the *Nimitz*. He did so, unaware of the first helo failure.

The six remaining helicopters flew on and reached the rendezvous point, an airstrip in central Iran. Waiting for them were the six C-130s, which had encountered no difficulties en route. After landing, it was determined that a third helicopter, which had sustained a partial hydraulic failure in flight, was unsafe. It had to be scratched from the mission. This left only five, one below the minimum considered necessary to conduct the mission as defined by operational planners. At this point, the decision was made to abort the mission.

As they prepared to withdraw, one of the helicopters was changing position on the ground to allow a second to refuel for the flight back to the *Nimitz*. There was so much dust from the helicopter's rotors and the C-130's propellers that visibility was severely degraded. The helo pilot turned the aircraft, and impacted a C-130. Both aircraft burst into flames. Shell casings and burning ammunition from the C-130 peppered the other helicopters. The inferno that followed took the lives of eight crewmen — three in the helicopter and five in the C-130.

This is a classic case of how mishaps — not the enemy — can ruin man's best made plans and cause the abort of military

Lt. Col. A. Michael Leahy, USMCR

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. . . The Iranian rescue attempt was a classic case of how mishaps — not the enemy —can ruin man's best made plans and cause the abort of military missions of the very highest level . . .

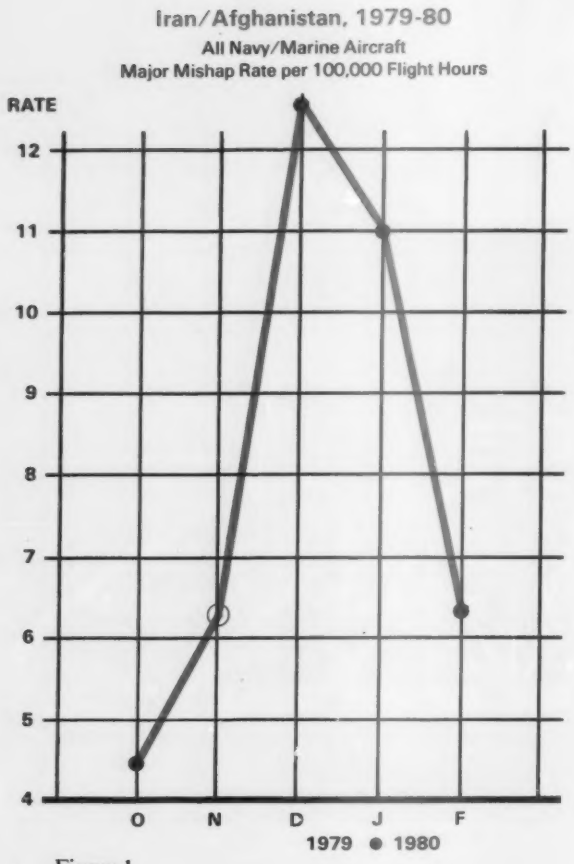


Figure 1

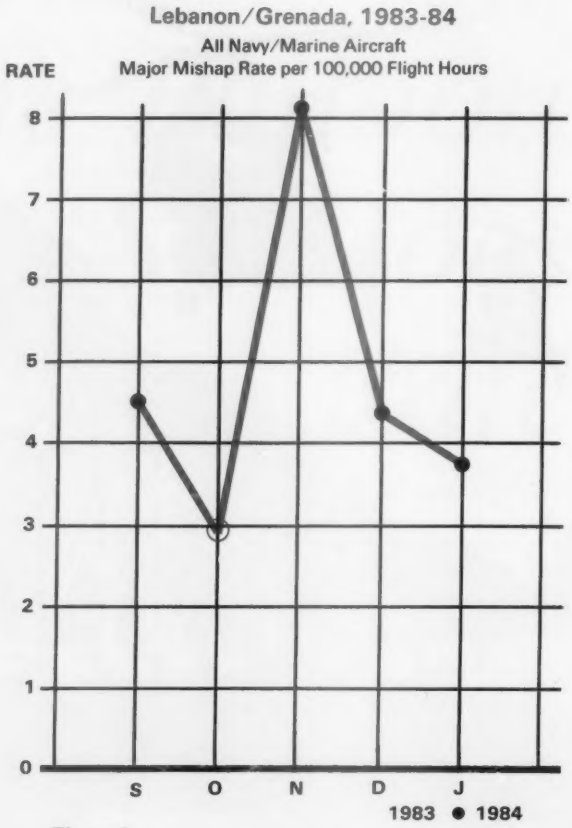


Figure 2

missions of the very highest level. In a little publicized sequel, a helicopter being used for training for a similar mission crashed in Monticello, Utah, three months later, killing a mechanic and injuring six other crewmen.

Although the Iranian hostage crisis is now more than seven years behind us, we live in a world of shifting political sands and many international hot spots. Our more recent military actions in Libya, Grenada and Lebanon, in fact, were all followed by increases in the Navy/Marine Class A mishap rate.

The Iran hostage crisis and the Soviet invasion of Afghanistan in November 1979 both resulted in an increased naval presence in the Indian Ocean. The Navy and Marine Class A mishap rate doubled from November 1979 when it was 6.28 (Class A mishaps per 100,000 flying hours) to a rate of 12.57 in December 1979 (figure 1). This included all mishaps throughout the Navy and Marine Corps. The rate gradually decreased back to baseline.

The invasion of Grenada occurred in October 1983. At the same time, U.S. Marines were engaged in Lebanon. The Class A aircraft mishap rate subsequently jumped from 2.97 in October to 8.16 in November (figure 2).

The international scene again heated up in late June 1985 when a TWA jetliner was seized by terrorists at the airport in Athens, Greece. The 727 was flown back and forth across the Mediterranean and finally settled in Beirut, Lebanon. Efforts to free the hostages created much tension, and the possibility that U.S. forces would be involved in some type of rescue mission. During those crucial weeks the Navy/Marine mishap rate jumped from 2.76 in June to 4.18 in July (figure 3).

On April 14, 1986, under the cover of darkness, 12 carrier-launched A-6s bombed Libyan military targets in and around

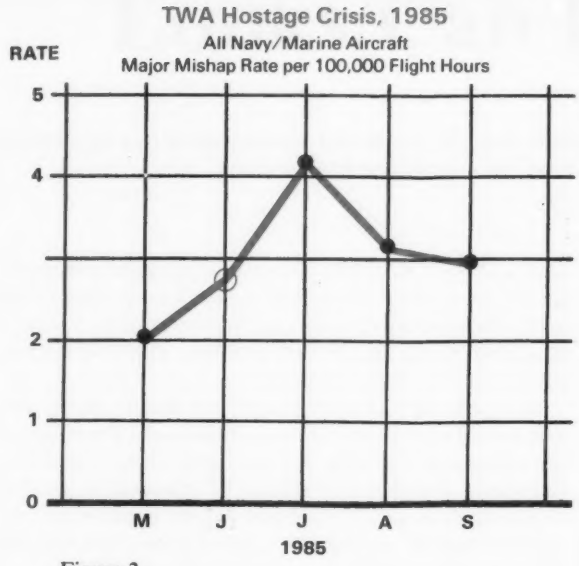


Figure 3

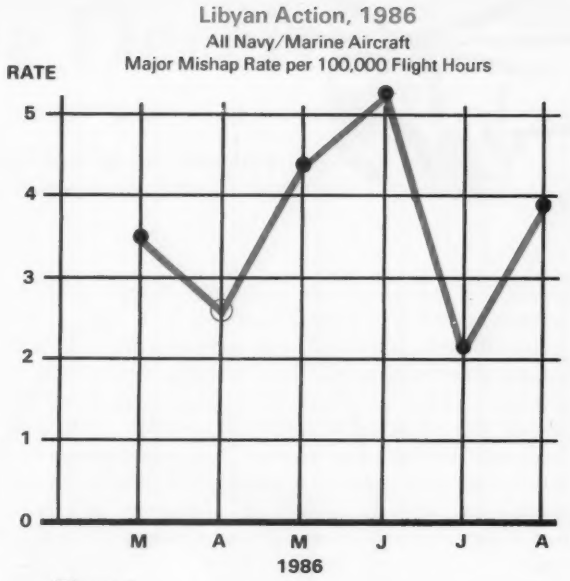


Figure 4

the coastal city of Benghazi. At the same time 13 Air Force F-111s flying from England attacked Tripoli. The Libyan bombing lasted only 11½ minutes. The Navy/ Marine aircraft mishap rate, however, increased from 2.56 in April to 4.32 in May (figure 4). (Losses in combat, such as those in Lebanon and Grenada, are not included in the charts. Combat losses are separate from mishaps in statistical compilations.)

(Although the rates increased during these four crises periods, there were also rate increases at other times during non-crises periods. Because of these other increases for which there is no direct explanation, the figures presented in this article, although accurate, cannot be termed "statistically significant." Yet, they indicate that a safety problem may occur during any international episode.)

Even though this Navy Libyan involvement was brief and without casualties, the task force came under significant stress with changes in schedules, extension of at-sea periods, around-the-clock flying alerts and the crisis environment under which the operations were conducted.

In such an uncertain international climate almost instantaneous response anywhere in the world is vital. Short of an all-out war, projections of military power today depend more and more upon rapid Navy and Marine Corps deployments. Requirements imposed upon fleet resources are likely to come

LCdr. D.L. Parsons

. . . The sudden change from peacetime training to combat alert can lead to a hazardous attitude: "Throw out the book, kick the tires, light the fires and go." . . .

suddenly, in response to tense political developments. Rapid response is the key to military success.

Unfortunately, adapting to sudden changes in mission tasking can compromise safety. This is especially true in aviation. Changes upward in the all Navy/Marine major aircraft mishap rate often occur following so-called contingency operations. During sustained crises, training squadrons have occasionally been tasked to hurridly fill flying billets. As one official said, "It was a 'must pump' situation to increase the flow of nuggets from fleet replacement squadrons to deployed units."

The mishaps, however, occurred on a worldwide basis and were not limited to the deployed units near the action or directly involved with a stressful situation. This sudden change from peacetime training to combat alert can lead to a hazardous attitude: "Throw out the book, let's kick the tires, light the fires and go."

Why did the mishap rate increase *throughout the fleet* when the Navy responded to these international crises? This phenomenon was initially observed 25 years ago during the Cuban missile crisis when the number of Navy/Marine Class A mishaps doubled in a single month.

The sudden change from a peacetime environment to a national alert or a far off crisis can provide a sense of excitement and even satisfaction to naval aviators, and, indeed, the entire military establishment. After all, they've been trained to respond to such situations. When the adrenalin starts flowing, a tendency to bypass established procedures can occur. This increases the chances of mishaps. Following the early period of "excitement," fatigue may set in, possibly leading to decreased vigilance in the cockpit.

Naval aviators throughout the fleet should maintain a heightened awareness of the fact that crises events typically lead to increased mishap rates. They should fly "by the book" all the time.

A mistaken belief that safety considerations are secondary to mission accomplishment is the true culprit. Safety considerations should be integrated into mission goals, so that performing the mission does not unnecessarily waste valuable assets. Naval aviators should be cautioned against this tendency. They must learn to emphasize safety, regardless of the operational environment, whether in peacetime training or on combat missions.

When the balloon goes up, the tendency to ignore safety precautions because "this is the real thing" must be discouraged. The use of NATOPS procedures, checklists and quality control must not be cut short because of a crisis. Attempting to fulfill a mission with an aircraft that is not mission-ready is asking for trouble. If you have problems with your aircraft, you may not meet your objectives.

There are steps that commands can take to ensure preparedness and alleviate stress on individuals. Developing a pre-deployment checklist, well in advance of possible sudden emergency deployments, should be encouraged. Such a checklist, on the unit level, should include steps for the command to take in planning for a rapid move. This will take some brainstorming by every department and division.

Maintain accurate local instructions to permit the rapid recall of personnel and packout of needed equipment, tools, records, etc. Consider the amount of cubic footage you'll need to ship all of it, also the kinds and amounts of containers you'll need. Inventory what's on hand and what should go in each box. A spare parts inventory is a must.

You can also take steps to alleviate the stress and worry of personnel on deployments by ensuring the welfare of families left behind. An ombudsman system should be set in motion. This may be coordinated through the local chaplain's office. An information packet for dependents, to assist them in accepting the possibility of a sudden deployment, could be distributed. Such a package should include information on who to contact for assistance in countering typical emergencies.

The individual squadron member should be encouraged to make up his own personal deployment checklist. It might include making sure that family bills will be paid on time during the deployment. Joint bank accounts with direct deposit of pay check and allotments to pay for mortgages, car payments and loans are a good idea. Emergency data sheets, allotments and insurance policies should be updated.

Relatively simple steps such as these, planned in advance, can alleviate much of the anxiety and worry of personnel when a sudden deployment looms.

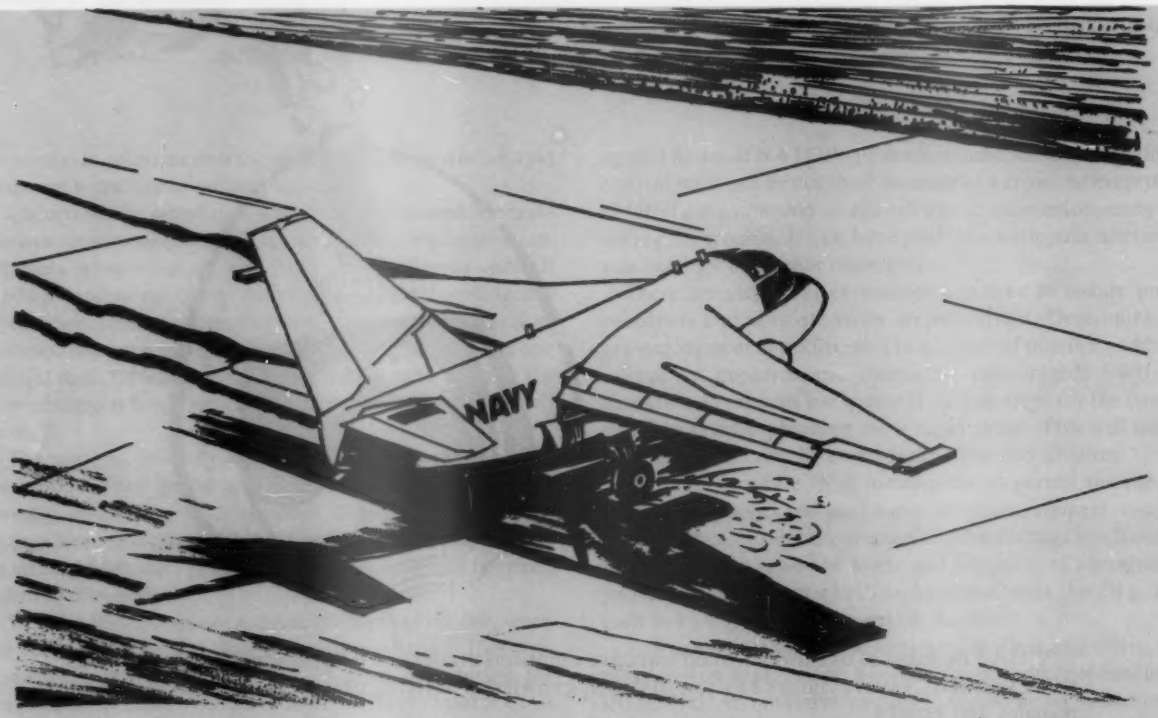
Supervisors can do much to head off the emergency deployment syndrome without compromising mission readiness if they will place *additional emphasis* in the proper areas. Schedule to avoid fatigue and stress whenever possible. Emphasize the necessity of being prepared for whatever mission tasking might be imposed, without compromising safety. These and other pre-planned actions are the real key to a rapid, *safe* deployment. ◄

Dr. Alkov, a retired Naval Reserve aviator, is head of the Behavioral Sciences Branch, Aeromedical Division, Naval Safety Center. He earned his Ph.D. from Florida State University.
Bud Baer is a staff writer for Approach.

Looks Can Be Deceiving

By Lt. Mark Mills

FOD FOD FOD



On Skid Row With a Viking. After executing a PAR in heavy rain, the pilot and COTAC of the S-3 noticed standing water at the runway intersection and chose not to commence braking until past the water. With 4,000 feet remaining as they passed the intersection, an anti-skid light illuminated when the brakes were applied. The aircraft was traveling about 80 to 85 knots. Anti-skid was deselected and normal brakes applied. Rollout, deceleration and directional control were normal as the S-3 rolled past the long field gear.

With approximately 1,000 feet remaining, the aircraft went through another area of standing water. The pilot applied light brakes at 15 to 20 knots as the aircraft entered the water. The nose slewed to the left, and the pilot released the brakes and actuated nosewheel steering, steering into the skid with no effect.

At 60 to 90 degrees to the runway heading and still in the skid, the pilot reapplied the brakes. The aircraft slowed but continued skidding through 180 degrees. The S-3 came to rest 30 to 50 feet from the left edge of the runway. The pilot then taxied clear of the runway.

Post-flight inspection revealed a large flat spot on the starboard main tire and a chafed wire on the port anti-skid transducer, which was the probable cause of the anti-skid failure.

This incident revives the discussion on mandatory field arrestments during all wet runway recoveries. With the density of air traffic at most air stations, mandatory arrested landings for the S-3A with its proven reliable anti-skid system is not realistic. Current STAN notes deal only with known or suspected anti-skid failures "prior to landing." In this particular incident, anti-skid failed 4,000 feet after touchdown and the aircraft slowed normally with anti-skid deselected until past the long field arresting gear. When the aircraft contacted standing water and the skid commenced, long field arrestment was no longer an option. Squadrons should consider incorporating the following into their SOP:

During wet runway conditions, if anti-skid fails on landing roll out, the pilot should consider going around if sufficient runway remains, or utilize long field arresting gear if available.

And the Student Wondered, "How Did He Do That?" The SH-3H headed out over the Atlantic on a routine training flight. The instructor pilot (IP) was in the left seat observing the replacement pilot (RP) in the right seat maneuver the aircraft for entry into the training area. Crossing the coastline at 500 feet and 100 knots, both pilots and crew heard several loud "bangs" from the No. 1 engine area. Several seconds later a distinct airframe vibration was felt, accompanied by violent yaw kicks and additional loud bangs from the No. 1

AIR BREAKS

engine.

The IP took control of the aircraft and called for the RP to advance the speed selectors to full power. On the third full-power call, the speed selectors were pushed to full forward. The cockpit indications were classic compressor stall indications straight out of NATOPS.

The IP continued with the checklist and asked the RP to shut down the No. 1 engine. The second time the IP asked for the engine to be secured, the RP responded with a look that translated into "For real?" The engine was then secured, and an uneventful landing was made at a nearby military airfield.

All you students out there remember: The instructor can't simulate everything. Now and then you **will** encounter a real emergency. On the other side of the coin, for all you instructors out there, ensure your students know the difference between a simulated and actual emergency in the cockpit.

Submitted by HS-1.

My Decision? Over the years, there have been incidents involving alert instructors on FAM flights who observed that things were "not quite right" with their students and correctly aborted the flight. There have been instances of hypoxia, hypertension and air sickness, all of which could have proved, at least, embarrassing, and at worst, incapacitating or fatal. Consider the latest incident in which the IP made the right decision.

The student NFO (SNFO) and his instructor manned their T-34C for a syllabus flight. Shortly after takeoff, the SNFO reported losing a contact lens from his left eye. The IP asked if he would be able to continue the flight. The SNFO replied affirmative.

The IP checked a short time later and saw the student rubbing his eye. He again asked if the SNFO wanted to continue. Again, the reply was yes. The instructor noted a degree of reluctance in the student's voice and made the decision to return to the field, calling for medical assistance when they landed.

The SNFO was examined in the hospital emergency room. His contact lens was not lost, but lodged in an uncomfortable position in the upper eye socket.

Here's a situation where, unlike a hypoxia incident, the individual's life was not immediately threatened, but the safe conduct of the mission, as well as the instructional value of the flight, rapidly deteriorated. The student, perhaps in an honest desire to accomplish the mission, but more than likely feeling the pressure, could not make the decision to own up and ask the IP to cancel the hop. Thus, the burden fell to the IP to make the decision for the student.

In the end, the result was the same, and the decision to cancel was correct. However, the student should have made the call himself. — Ed.

Ouch! The instructor pilot (IP) and his midshipman student briefed for a Fam hop in a T-34C. Afterward, the IP helped the middie to strap into the rear cockpit. Leaning into the cockpit, the IP rested his right hand on the student's shoulder and then on the seat back for balance. The seat was in the full up position.

Suddenly, it dropped a full 5 inches, pinching the IP's right finger between the seat back and bracket on the shelf where the seat quick-release pin is attached. The IP's injury consisted of an open fracture with associated deep laceration to his fifth finger. What caused the seat to drop? The midshipman inadvertantly released the seat lock.

Uncommanded Wingsweep Off the Cat. The F-14 crew manned their aircraft for a twilight launch. Prelaunch checks showed everything normal. With a weight of 65,000 pounds, the Tomcat was placed in tension. The pilot selected zone five afterburner, and the aircraft launched from Cat 3. As the plane moved down the cat, observers noticed the aux flaps starting to program up. They notified the crew.

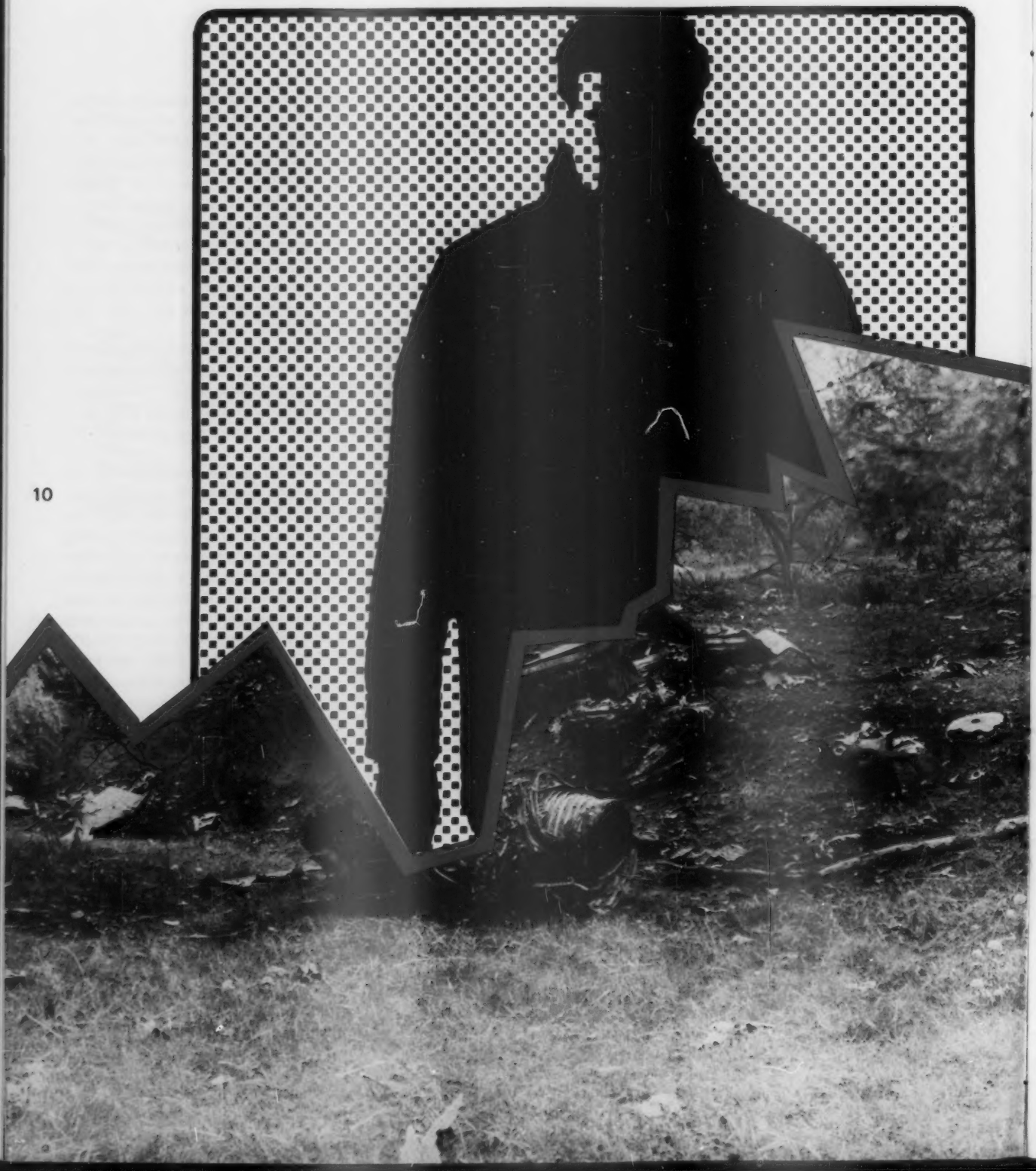
Clearing the deck, the pilot felt the plane begin to settle, and added back stick as the RIO called "150 knots." The fighter continued to settle, with AOA at 17 units and airspeed 180 knots.

The RIO looked back and told the pilot the wings were sweeping aft, and sensing an impending stall, the pilot lowered the nose to 12 units AOA. The Tomcat accelerated, eventually establishing a good rate of climb. Reaching 10,000 feet, the crew began troubleshooting. Wing sweep control was reestablished, and the aircraft made a successful recovery.

PLAT tapes revealed the aux flaps started up, followed by uncommanded aft wing sweep prior to the aircraft clearing the shuttle. The F-14 settled approximately 30 feet before a positive climb was firmly established. Postflight inspection showed dual failure of the aux flap control and wing sweep command from the CADC. The aircraft had 22 knots excess end speed; a critical factor in maintaining controllability and flying speed.

The quick, professional responses and knowledgeable analysis of the situation saved the crew and their aircraft. Kudos to Lt. Tim Bacci (pilot) and Lt. Steve Pollar (RIO) of VF 213. — Ed. ◄

Post Trauma S



a Stress Syndrome

. . . PTSS is a normal response to aviation mishaps. Recovery can be both rapid and successful when supervised by a mental health professional. . .

By LCdr. Paul Miller

Post Trauma Stress Syndrome (PTSS) is a 25-cent phrase for "being all shook up." It is a distinct, identifiable behavior pattern that results from emotional stress due to a traumatic life-threatening event. Often we hear people say "I got the scare of my life," or "They scared the wits out of her." PTSS is much more profound and longer lasting than a typical scare. It is an emotional upheaval of great proportion. The effect that it has on the average person is deep, long lasting and readily identifiable. The treatment or the recovery from PTSS should be handled by a trained mental health professional. When treated properly, the record shows an excellent rate of recovery for people affected by PTSS.

PTSS is what can happen to people when they see a bloody, gory event, such as a plane crash with violent loss of life. It also occurs in some cases when no life is lost, but an individual sees the potential for violent loss of life. Such a traumatic event shakes a person's belief about being in control of his or her life. It can also upset that person's basic values.

Sometimes the PTSS is delayed, depending on the person's will to survive through denial of the life-threatening event. Some people will temporarily hold in abeyance or delay their reaction to the event, continuing to function to ensure basic survival. This denial period may last minutes, hours, days or weeks. The brain may temporarily suspend the grief reaction for the sole purpose of completing an agenda, which it judges critical to survival. The period of suspension will vary in proportion to what is going on in a person's life during the traumatic event.

PTSS can readily be recognized by the average individual — for example, the aviation safety officer. How will people affected by PTSS appear to the ASO? They will be grieving, more quiet and less sociable than usual. They will tend to exhibit signs of anger, despair and loneliness, and want to talk to communicate their sense of loss, whether real or not. Their eating, sleeping, social and working habits as well as their ability to handle further stress will change. People may tend to be irritable, especially over relatively minor things. It will appear that every attempt to comfort or console is met by hostility.

The average person cannot help such an affected individual very much. However, the recovery, although complex, has a remarkably consistent pattern. Most people go through a recovery pattern which includes: trauma, denial of hurt, recognition of hurt, horror and shock, anger, severe anger, desire for retribution, resignation of anger, acceptance, reaching out to others, sorrow, sadness at the loss, healing of the loss, yearning to go on with one's life, beginning of recovery and recovery toward normalcy. Such a process may take a week, several months or even a year.

A trained mental health professional may be useful to an ASO. He may help the ASO provide essential leadership in this area.

Why should the ASO be concerned about the mental health of people involved in an aviation mishap? Today we see more and more attention being given to hostages, victims and survivors of traumatic events. As a manager during an aircraft mishap, the ASO should have access to Navy psychiatrists, psychologists, flight surgeons, chaplains and Counseling and Assistance Center professionals. They could be a direct health professional resource for the ASO, or a referral source for victims, witnesses or survivors.

The ability of a mental health professional to help begin the recovery process is strongly documented. He should be included on the aviation unit's field mishap response team. He could identify people who are in PTSS, or are potential victims, and schedule professional supervision during the recovery process.

PTSS is a normal response to aviation mishaps. Recovery can be both rapid and successful when supervised by a mental health professional. The ASO is both a mishap investigator and an aircraft mishap disaster response coordinator. He can plan for a professional mental health response to PTSS by including a mental health professional as an integral part of the unit's pre-mishap plan. The ASO who does this will have taken an important step in helping those affected by PTSS.

The Naval Safety Center has recommended to the Navy Medical Command that billets be created for aviation-trained clinical psychologists who would be made available to counsel aviation personnel. — Dr. Robert A. Alkov, Behavioral Branch, Aeromedical Division, Navy Safety Center. ◄

LCdr. Miller is ASO for VR 24 at NAS Sigonella, Sicily. Previously he was ASO at NAS Pensacola, Fla. A graduate of Rensselaer Polytechnic Institute, he has logged 3,600 hours in 11 aircraft types.

Aviation Weather Safety

The weather office at most naval air stations is manned 24 hours a day by a qualified aerographers's mate (AG) weather forecaster. He provides on-scene flight weather briefings, local area forecasts, weather warnings and a variety of meteorological and oceanographic data. During a flight, a pilot can maintain contact with a forecaster through the "pilot-to-metro" radio network. **All of this is about to change.**

COMNAVOCEANCOM has determined that the tempo of aviation operations at the following naval air stations does not justify the 24-hour presence of a weather forecaster: Alameda, Chase Field, Dallas, Fallon, Key West, Kingsville, Lemoore, Mayport, Memphis, Miramar, Meridian, New Orleans, Patuxent River, South Weymouth, Willow Grove and Whiting Field. A forecaster will be on duty at these stations only during "peak operating hours." At other times of the day and night a **weather observer** will be on duty at these stations, and the responsibility for briefings, forecasts and warnings will be transferred to a remote "Sub-Regional Forecast (SRF) Center." These centers will be located at Brunswick, Oceana, Jacksonville, Pensacola, Corpus Christi, San Diego and Moffett Field.

Obviously, SRF support is a significant degradation to the present state of on-scene, tailored, real-time aviation support. Here's what that means to the

Let Anymouse Know. We encourage you to write Anymouse whenever you see "a mishap about to happen." If you know of a hair-raising situation in the air or on the deck, let Anymouse know about it. You may help someone else avoid an unsafe incident.

Anymouse is a unique department in Approach where no names are used. All information is anonymous. In fact, Anymouse was born three decades ago when someone couldn't spell "anonymous" and signed his letter "anymouse." Thus, a mouse wearing flight gear has become a worldwide naval aviation safety symbol.

Over the years we have found it is often more prudent and speedy to report unsafe situations anonymously. Keep in mind, though, that Anymouse is not interested in personality conflicts or non-constructive criticism of individuals. All views expressed are those of the writers and do not imply endorsement by the Naval Safety Center.

For your convenience, postpaid Anymouse mailing forms are available in most ready rooms and from most flight safety officers. Use of the form is not mandatory, though. Just jot down your thoughts and mail to Anymouse, Approach Magazine, Naval Safety Center, NAS Norfolk, VA 23511-5796.

safety of flight at the stations without 24-hour forecaster services:

- More flights conducted without the benefit of a weather briefing, because it is more inconvenient to get a timely briefing.
- Less accurate terminal forecasts and flight briefings, because the remote SRF Center forecaster won't be as familiar with all the weather over his expanded area of responsibility.
- Higher risk to personnel and property because there is no on-scene forecaster who can provide timely and accurate warnings of localized severe weather.
- Degradation of the pilot-to-metro radio network due to the absence of a forecaster to provide in-flight briefings.

Subregional forecasting support has all the potential of being a "mishap about to happen."

Weatherwarnmouse

Past CNO initiatives to balance the sea-shore rotation of all enlisted ratings meant the loss of approximately 100 AG shore billets. Many of these billets were filled by personnel who are qualified as forecasters. As a result, the Sub-Regional Forecast (SRF) Plan was developed for CONUS. The major goals of this plan were safety of flight, and (as much as possible) the maintenance of existing levels of meteorological and oceanographic services.

Face-to-face weather briefings are best, but they are not mandatory. A survey of six Eastern naval air stations with the highest tempo of air operations revealed that more than 60 percent of DD175-1 weather briefings were provided by weather vision or telephone, rather than face-to-face. Further, forecasters will be on duty during all predetermined periods of high-tempo air operations. Many flight crews will be able to alter their brief times to take advantage of this fact.

The SRF Plan is a new concept, and there will be growing pains. The success of this plan will require awareness and cooperation on the part of flight crews and personnel in the SRF Centers and satellite air stations. The goal is to provide forecasting and warning services that are timely, accurate and satisfactory — Keep us posted on how you think the concept develops.

Bogus Flight Gear Used

Safety! Safety! Safety! We are always hearing about it, both on and off duty. We read about it in letters and magazines floating around the fleet in shop spaces and ready rooms. With all this talk about safety, it still amazes me how our aircrews continue to disregard safety by insisting on using flight gear that has not been approved.

The PR is the command's "local expert" when it comes to the proper use, configuration and wearing of flight gear for our aircrews. But when the command decides to allow aircrews to wear just about any configuration they want, against the PR's advice and current NAVAIR publications, the PR is caught between a rock and a hard place.

This problem is amplified when the CO, XO and ASO are the biggest offenders. Our aircrew recently bought a civilian-made helmet in the HGU-55/P configuration. The Navy rejected this helmet because it failed to meet the safety standards required for aviators' equipment. But the aviators reply "So what! I'm going to lose my helmet when I punch out, so who cares?" Now where is the safety-conscious aviator in that statement?

I have been a fleet rigger for 12 years, and this problem has existed for as long as I can remember. If we are as concerned about **safety** as we say we are, then let's get serious about it, listen to our "local experts" and follow the published directives! Let the PR earn his pay by providing our aircrew with the best and safest authorized flight gear. The bottom line of a PR's job is to keep aircrews alive in the event they are forced to exit their aircraft prior to the end of a mission.

FrustratedPRmouse

Earthquake Hazard

A radio call from the NOLF Imperial Beach, Calif. tower advised a helo on final that a "significant earthquake" had just shaken the area. Tower advised caution on the approach because runway damage had not been determined. Other helos on the pads were similarly warned.

If there is any question on runway condition, the tower should have the duty driver buckle on his high-mileage duty vehicle and make a low pass to check for damage. Don't risk damage to any aircraft or the souls on board.

What is the policy in quake country?

Tremorousmouse

P.S. Quake epicenter was approximately five miles north of field at 4.6 on the Richter scale.

There's no uniform policy in "quake country." Military controllers are responsible for relaying information about any condition that affects the safe use of a landing area to their air operations office. They would issue an advisory or instruction as appropriate to the concerned aircraft. — ACCM F.G. McGee, Air Traffic Control Analyst, Naval Safety Center.

Safety Second

It seems to me we have more exceptions to safety rules than we have rules. For example, flight deck handlers and bosn's don't have to wear eye protection at night or in the rain. I feel that those in charge are taking a chance on eye injuries.

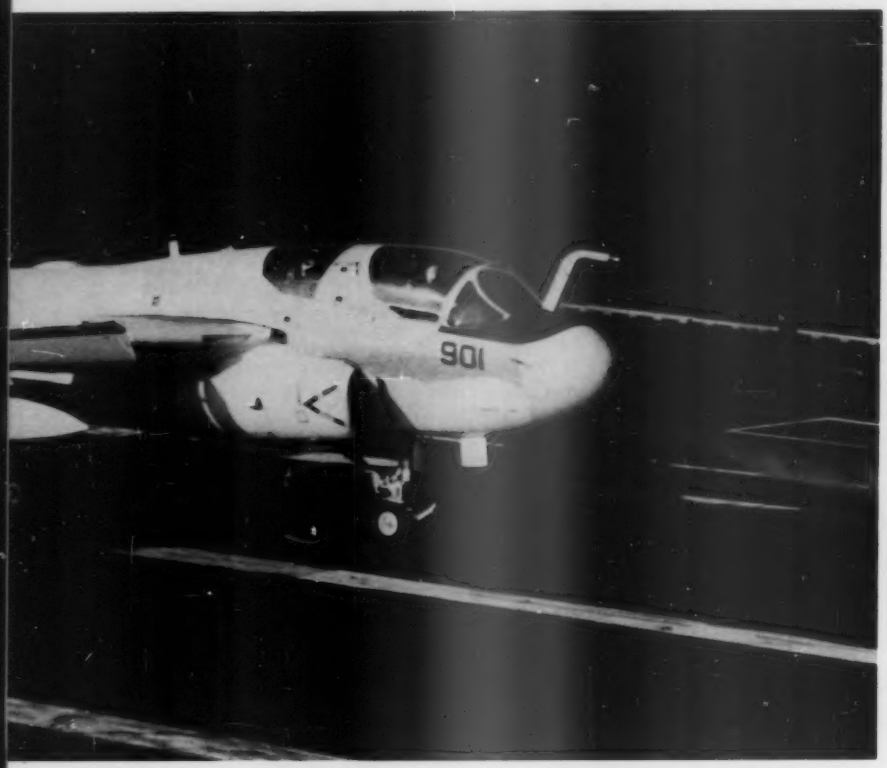
I wear my goggles during all flight ops. With clean lenses, I can see well enough to taxi. When clearance is in doubt, I call on wingwalkers.

Cranials are required on deck during exercises, but some of our crew exempt themselves from this rule. I've seen VIPs escorted on the deck during flight operations without eye, ear or head protection. Let's show our guests that we *really* care about their safety.

Goggleyedmouse

The Flight's Not Over Till It's Over

By Ltjg. Mic Lemaire
and
Ltjg. John Mieras



IT was the first day of fleet CQ with the usual smattering of nogrades, wave-offs and bolters. I'd just settled onto the ball after a huge overshoot. After a few power calls, I snagged a three wire. This nugget's first fleet CQ was complete, and the flight was over.

With planes taxiing everywhere on the deck, my attention was on the man in the yellow jersey, our plane director. Taxiing me out of the gear, the plane director guided me to elevator No. 1, where I pulled the parking brake and prepared for shutdown. After the aircraft was chocked and chained, the plane captain signalled me to secure the starboard engine.

"Are we getting out now?" asked Sweat, one of the NFOs in the back of our Prowler. "I don't know yet. There seems to be a lot of confusion out there," said Bobo, the senior man on board.

The plane captain and plane director were discussing something. After five minutes of waiting and wondering, I was given the signal to secure the port engine as well. Now we had no ICS, so conversation between the front and rear cockpits had to be at the top of our lungs.

We awaited the signal to open the canopies. We couldn't because an F-14 was turning on Cat No. 1. After another five minutes of yelling and wondering what was going on, the yellow shirt signaled that we were going to the hangar deck. Bobo yelled, "Let's get these canopies open." I gave the director the signal to open canopies, but the request was denied.

"Why won't he let us open the canopies?" I wondered. It just didn't seem logical to ride a cold airplane down with the canopies closed. But this was my first time riding the elevator down so who was I to change procedures?

Once on hangar deck level, I again signalled to open canopies and was again ignored. "What does this plane director want, to see us melt?" I asked Bobo, as I wiped my brow.

Finally, a spotting dolly appeared at our nose. "It looks like they're ready to park us. Let's get the canopies open!" I said. "It's about time!" came an exasperated yell from the aft cockpit. Once again, the director denied our request. The spotting dolly went out of sight as it moved toward the nose of our aircraft. The director gave me the signal to release brakes. Pushing the brake handle in and rotating it 90 degrees to provide auxilary brakes, we began to move forward.

"That's odd" I thought, "The plane director is giving signals to the spotting dolly driver above the waist level." I was beginning to feel uneasy. "Why don't we turn right, the way he's signalling?" We continued forward at an ever-increasing speed. Something definitely was wrong. I looked to the left and saw the hangar bay doors weren't fully open — the left wing was not going to clear! I shot my left hand out and grasped the brake handle in a death grip. I pulled with the strength of the Hulk. Like the Hulk, I turned green as our port jamming pod struck the hangar door.

I closed my eyes, shook my head and looked out at the plane director. He was finally giving us the open-canopy signal. Now the flight was over.

Many factors contributed to this totally preventable crunch. It started with miscommunication between handlers on the flight deck, and between flight deck and hangar deck personnel

about how the plane was coming down cold instead of hot. The hangar deck handlers were told that we were hot, and they were going to taxi us into the hangar bay. Thus the canopies stayed closed, and the spotting dolly was never hooked up.

The flight crew, knowing both engines were secured, should have opened the canopies and removed their helmets in preparation for towing. The ship was in a port list so the aircraft began to move, once the brakes were released. Unfortunately, this led the aircrew to believe they were hooked up to the spotting dolly and helped reconfirm to the hangar deck handlers that the aircraft was hot because they were expecting it to move under its own power. It was not until the aircraft didn't turn as expected that both the director and aircrew realized they were not on the same frequency. By then, it was too late.

This incident shows the need for *total situational awareness* about what's going on around you. You can't assume anything. There's no substitute for attention to detail. If in doubt, stop and clarify the situation. We should have realized this — all of us. ◄

Ltjg. Lemaire and Ltjg. Mieras fly with VAQ 130, based at NAS Whidbey Island, Wash., and are attached to CVW 9 aboard USS *Kitty Hawk* (CV 63).

The Dry Run

By LCdr. R.E. Frazier

THE H-46 helicopter was in a 40-foot stable hover, conducting practice SAR approaches and hoist work. As the hoist operator leaned out the main cabin door and deployed the hoist, he happened to look at the aircraft's aft pylon and noticed the lower clamshells moving laterally and vertically approximately 1 inch. He notified the pilots, and the helicopter aircraft commander quickly decided to abort the flight. The crewman retrieved the hoist. As the helo returned to home plate at less than 50 knots, everything appeared normal until a mile from landing. Suddenly both aft lower clamshells tore off their hinges and fell from the aircraft. As they fell the 500 feet to the water, they struck an anchored sailboat. The aircraft continued to a landing.

This event actually occurred up to the point where the clamshells fell off. The rest could have happened. Safety officers and aviation safety officers can get a lot of mileage out of these near-misses; they can use them to accomplish a number of the goals of their safety programs. The key: Use the incident as a "dry run," long recognized as one of the truest and best tests of the workability of a squadron pre-mishap plan. Expand the dry run to give the command a good hard look at itself by spot-checking maintenance, operations and training.

We have successfully instituted just such a program and use it once a quarter. The first step is to keep your ear to the ground and pick out a useable incident. It can be an aborted flight, an unusual aircraft discrepancy, an aircrew judgment call or whatever. Change the outcome to fabricate an aircraft mishap. They don't all have to be class A's. Take your scenario to the CO/XO and get approval to conduct your dry run. Coordinate with the ops officer so he can adjust the flight schedule. Then do it!

Ideally the drill should be the same day, but no more than two days after the incident while facts and information are still current. Start with the duty office. Use role players to place phone calls while you observe the SDO/ASDO actions. **Be sure they know it's a drill so they don't place any unexpected outside phone calls.** Have the duty office implement all initial reports and messages, either to you or your role players. As they progress through the pre-mishap plan, lots of realistic training will occur as recall individuals are certainly scattered in all directions, and normal business is also being conducted. These distractions should make the SDO/ASDO instant believers for the need to use *all* available resources.

After the mishap board is assembled, they should gather data that falls within their individual areas of responsibility: screening aircraft records, checking aircrew records and interviewing witnesses. The only thing you actually lack is a mishap site, but this is a good time to discuss mishap scene roles and refamiliarize applicable AMB members with the contents and uses of the aviation safety crash kit.

During the next couple of days, the AMB can discuss findings during record screenings and identify any areas where squadron procedures can be improved or changed. You may find yourself with a HAZREP or TPDR as a result of your labors. The Board can brainstorm the scenario and raise questions on how different situations should be handled, making each member more comfortable with his role on the AMB.

Next, construct your mishap report. This can be a real eye-opener when it comes to the differences of opinion on the conclusion and recommendation sections. Finally, with a complete report, have the commanding officer debrief the results to the squadron, emphasizing that this is a training exercise but based on a series of real events. There are some good lessons to be learned. The board recommendations will generate solid ideas that will strengthen programs and improve overall readiness.

LCdr. Frazier is safety officer for HC 8, NAS Norfolk, Va.

REGULA
for Opera
AIRCR

Commencing Januar

1. Don't take the machine into the air unless you are satisfied it will fly.
2. Never leave the ground with the motor leaking.
3. Don't turn sharply when taxiing. Instead of turning sharp, have someone lift the tail around.
4. In taking off, look at the ground and the air.
5. Never get out of a machine with the motor running until the pilot relieving you can reach the engine controls.
6. Pilots should carry hankies in a handy position to wipe off goggles.
7. Riding on the steps, wings, or tail of a machine is prohibited.
8. In case the engine fails on takeoff, land straight ahead regardless of obstacles.
9. No machine must taxi faster than a man can walk.
10. Never run motor so that blast will blow on other machines.
11. Learn to gauge altitude, especially on landing.
12. If you see another machine near you, get out of the way.
13. No two cadets should ever ride together in the same machine.
14. Do not trust altitude instruments.

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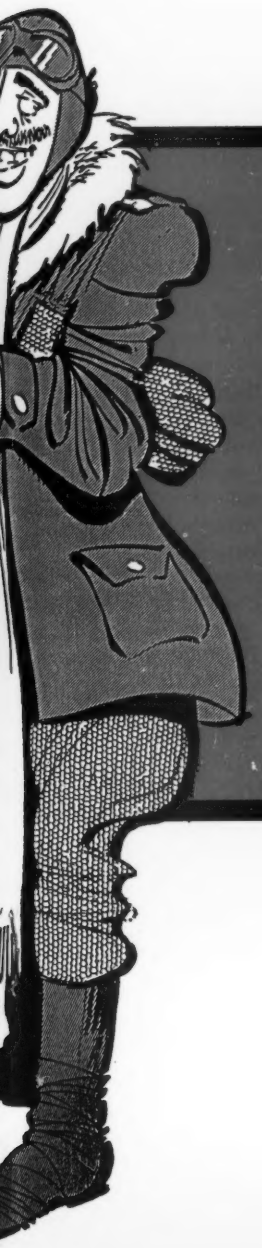


15. Before you begin a landing glide, see that no machines are under you.
16. Hedge-hopping will not be tolerated.
17. No spins on back or tail slides will be indulged in as they unnecessarily strain the machines.
18. If flying against the wind and you wish to fly with the wind, don't make a sharp turn near the ground. You may crash.
19. Motors have been known to stop during a long glide. If pilot wishes to use motor for landing, he should open throttle.
20. Don't attempt to force machine onto ground with more than flying speed. The result is bouncing and ricocheting.
21. Pilots will not wear spurs while flying.
22. Do not use aeronautical gasoline in cars or motorcycles.
23. You must not take off or land closer than 50 feet to the hangar.
24. Never take a machine into the air until you are familiar with its controls and instruments.
25. If an emergency occurs while flying, land as soon as possible.

Frustrations brought about by years of shrunken budgets produce an attitude of "Why write it up? Nothing will be done about it anyway."

Lt. Ned Lundquist

Word Bullets

By LCdr. Ken Darnell

WHEN the media depict naval aviation, most often they choose the sleek, state-of-the-art Hornets, shown booming off the cats to defend the fleet. Let's face it, we're a nation enamored with technology: fly-by-wire, glass cockpits and airframes, which can give more than the crews who fly them can take. This is naval aviation — or is it? Older, out-of-production aircraft are far more numerous, and they too are mainstays of the operating forces.

The state-of-the-art guys generally do well for themselves in terms of safety. Their training is the best. Money and parts are plentiful, and maintenance talent is abundant. The contractor is readily available to help solve problems. Safety issues are well-documented because the visibility is high, and the bucks are normally there to get them resolved.

On the other hand, consider the plight of the out-of-production guys. Funding slows way down or stops. Contractor interest fades. The morale of the community suffers as the "first team" status wanes and talent migrates toward newer systems. Configuration control loses its impetus, and training becomes a problem as the old hands are replaced by inexperienced personnel. The aircraft begin to age and components, many of which have undetermined service lives, begin to fail. Replacements are nonexistent or hard-to-get. Out-of-production aircraft, as time passes, pass into the risk zones of greatest potential. Maximum effort is required to maintain acceptable readiness postures and margins of safety.

I think most folks realize that documentation, not anguished complaining, is what gets the attention of those who can make things happen. When safety-related issues come up, anyone who's ever been associated with the involved community can rattle off dozens of specific problem areas almost without thinking. Such squadrons are particularly attuned since they live with these problems on a daily basis.

The documentation of such problems, however, just isn't always there, particularly in the out-of-production communities. Frustrations brought about by years of shrunken budgets produce an attitude of "Why write it up? Nothing will be done about it anyway."

Safety and material problems aren't likely to go away. In fact, they're likely to get worse if we don't get serious about documenting our problem.

Part of the Naval Safety Center's mission is to assist the fleet in getting problems solved. We need your help. Hazard reports are one type of documentation that can be a factor when the decision-makers compare dollars and needs. Hazard reports are real "word bullets." Corporate memory and experience only go so far when hard copy justification is needed. Help us and yourselves by providing these word bullets. You can't shoot for max effect with empty guns.

LCdr. Darnell was an aviation system safety analyst in the Systems Safety Department, Naval Safety Center, Norfolk, Va. at the time of writing this article. He has since transferred to NAS Barbers Point, Hawaii.

Night

By Lt. William M. Foster, II

IT is a black night VFR break, the kind where your own anti-smash lights reflect in the canopy and blind you every once in a while. The pilot eases his A-7E into a 30-degree angle of bank, a gentle turn off the 180. He sets up a good rate of descent and looks out for alignment. Out of the corner of his eye, he sees something. He looks straight at it and it disappears. Looking back, his rate of descent is much greater than intended, and he makes a quick correction, then looks back out to check on the invisible object. Aluminum crunches aluminum. Then, like daylight, ejection seat rockets light the cockpit. The black ground rushes up. Again, more brightness, only this time it is all around, accompanied by searing heat and pain.

I watched it from the balcony of the BOQ. I knew both pilots and they were good. They both would tell you it was black out there if they could. But only one is alive today. I don't need to regurgitate basic physiology about why things disappear when you look directly at them at night. But night *is* different. You've got to acknowledge it and respect it.

My first encounter with a night incident was not really my own, but that of a close friend. During night FCLPs, he landed a TA-4 on its drop-tanks, wheels up. His anxiety and the professional scrutiny he suffered afterwards left an indelible landing checklist in my mind. We all make mistakes, but the closer scrapes with death have a tendency to make us more exacting pilots, for awhile anyway.

A year later, after returning from an exhausting night CQ in the "Whale," I found myself stuck in 2 feet of mud. The taxi director's fitness-for-duty inspection revealed a little beer-tasting in the line shack that night. Night vision is tough enough without impaired perceptions. The unlit ramp and the taxi director's inexperience and intoxication helped make a long night even longer.

When taxiing at night, how many times have you seen a plane captain walk backwards while directing the plane? Ever see one trip over tie-down chains while doing so? My favorite is the disappearing wand trick. As soon as the hand is dropped to signal a turn, the light goes out. There is always that moment of guesswork before you stop. Just as difficult is trying to follow taxi directions when there are white lights backlighting the director. Then there are the fire extinguishers like the one I had to tackle while monitoring the launch, just before the engine nacelle passed over it. No one saw it.

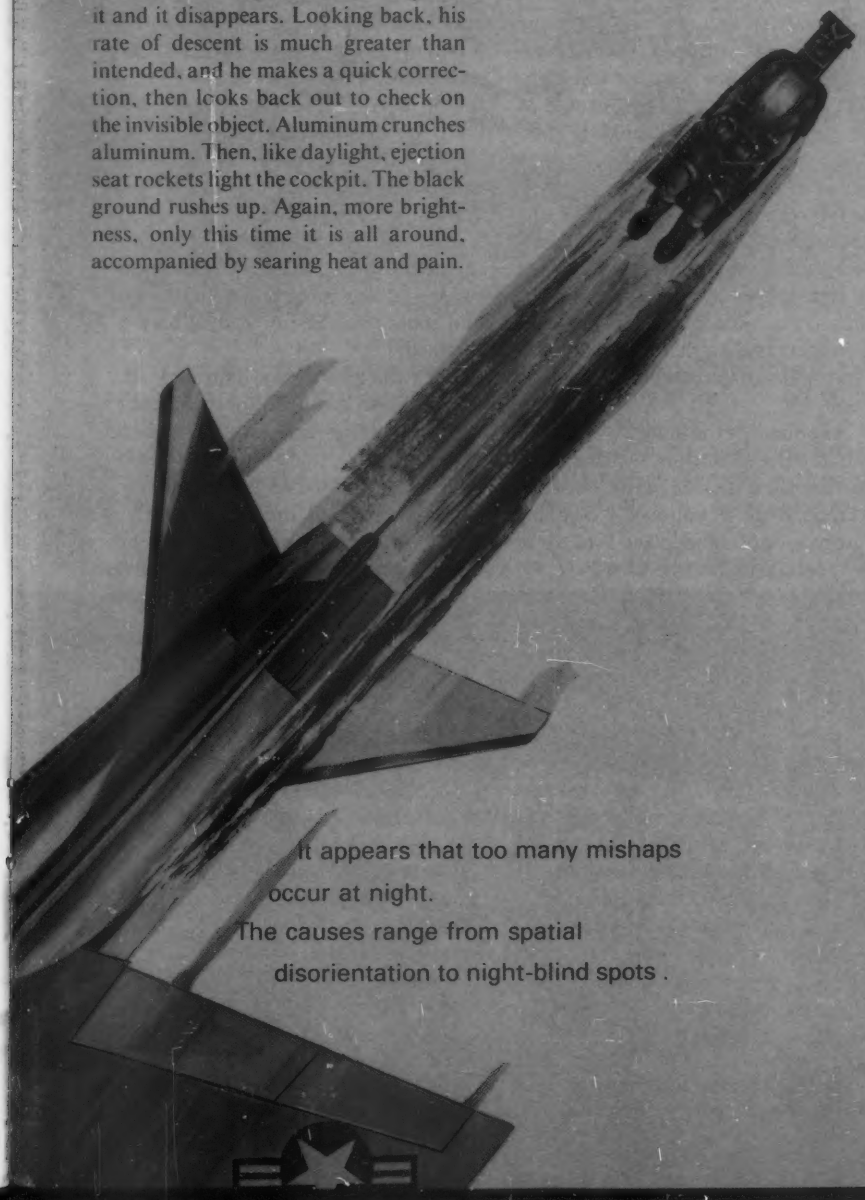
From reading Approach magazine and other sources, it appears that too many mishaps occur at night. The causes range from spatial disorientation to night-blind spots. Each has been amply addressed; yet, the night accidents continue to roll in.

Do we brief things differently? Do we really have a different attitude? Our actions in the plane show we act differently. I know experienced navigators who feel the need to look at a TACAN at night to change the channel, while during the day they know exactly where it is.

What is the **real** cause of bolts missing on preflight, equipment not seen on the ramp or airplanes not seen in the landing pattern? There's no doubt about it. It is dark at night, and it is harder to see in the dark.

Obscurity leads to absence of sensory input and higher potential for misfortune.

Lt. Foster flies A-3s for VAQ 33, NAS Key West, Fla.



It appears that too many mishaps occur at night. The causes range from spatial disorientation to night-blind spots.

The Good Deal That Wasn't

By Lt. Kevin O'Connell

. . . The aircraft began an immediate uncommanded left roll as the flaps/slats extended, which I could not overcome with the limited roll control available . . .

THE flight began innocently enough . . . one of those "good deals" we all appreciate. I was a relatively new instructor in the FRS. Instead of another long FAM WST or right seat hop, I was blessed with an A-6, a dozen practice bombs and all the range time I could use. My B/N was an experienced instructor, and our mission was to fingerprint the aircraft for use the next day in the Intruder Derby competition.

After brief, man-up and takeoff, we engaged in a series of dive and loft deliveries at the target. We were searching for the right combination of cursor placement and computer release/advance delay that would yield bullseyes. Despite our best efforts, the system was scattering bombs in an unrecognizable pattern. It was obvious that the system needed more work. Pulling back sharply on the stick after our last high-speed run, I thought that we would at least depart the target looking good despite our hits.

As we zoomed upward, a large vibration shook the aircraft and the stick stiffened in my hand. Looking at the annunciator panel confirmed my initial guess: a hydraulic failure. The backup-hyd light was illuminated. A quick glance at the gauges revealed that there had been a total failure of the combined hydraulic system.

Compounding the failure was a binding of the flight controls, which did not allow any right stick input to the control surfaces. While I continued a climbing left turn towards homeplate, I called for the hydraulic failure checklist.

We climbed to a safe altitude over coastal waters, opened the PCL and discussed the problem. The hydraulic fluid visible on the starboard wing and the lack of any right stick travel led us to believe we had suffered a hydraulic failure connected with the right flaperon actuator. We found that by turning the AFCS stab aug mode on, some small right stick was available, though any quick movement of the stick would kick the stab aug off. Feeling that we could safely control the aircraft, we next attempted to lower the emergency flaps/slats and then the landing gear.

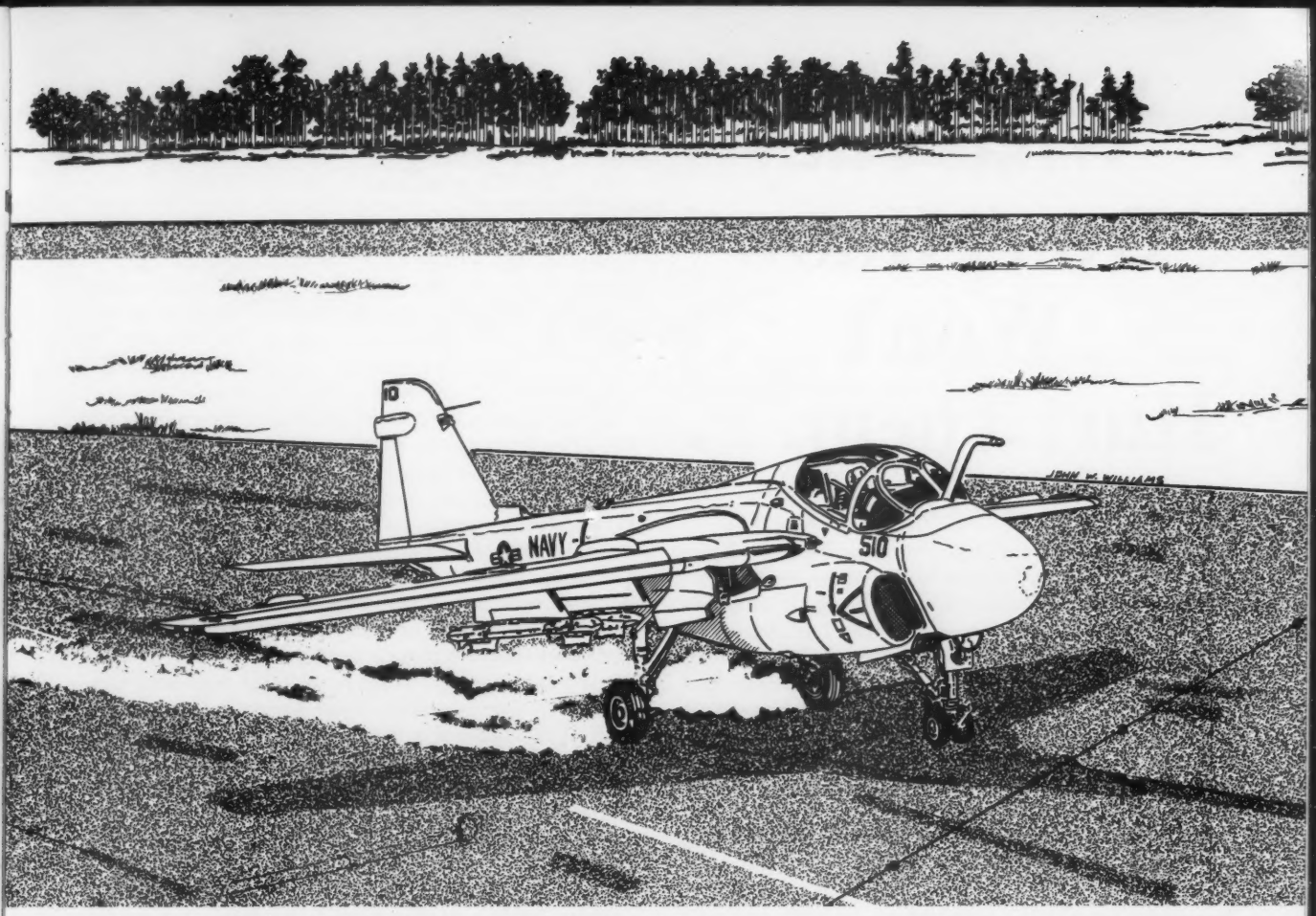
Consulting the PCL, we slowed our crippled Intruder to 180 KIAS and lowered our emergency flaps/slats. The aircraft began an immediate uncommanded left roll as the flaps/slats extended. I could not overcome it with the limited roll control available. My B/N immediately called for flaps/slats up as I noticed him checking his waist straps and the ejection handle out of the corner of my eye. Fortunately, we were able to recover the aircraft by pushing the nose over, increasing airspeed and pulling up into a climbing left turn. We were quick to notice that we had lost over 4,000 feet recovering the aircraft and would have been forced to eject had we not started with sufficient altitude.

Once again at altitude, we discussed our options. With a combined hydraulic failure we required emergency landing gear blow down to be actuated at 150 KIAS. Without our emergency flaps/slats down, we wouldn't be able to slow to 150 KIAS without stalling the aircraft. We decided to get as slow as we could by pulling the nose up, actuating the landing gear blow down as the aircraft slowed, then lowering the nose to avoid departing. Fortunately, the landing gear blow down worked as advertised. We had three down and locked and could think about heading back to the field.

With the gear down, flaps and slats up and very little right stick authority, we were in for an interesting approach. We called base, told them of our problems and requested an LSO on station. We completed all the checklists, then discussed our options and the possibility of ejection on the approach as we headed inbound. It was nice to hear the reassuring sound of Paddle's voice as we turned in towards the runway with a clear deck and the crash crew standing by.

Everything looked and felt fine until we were hit by a gust of wind at about 50 feet. A quick input of what right stick was available kicked the AFCS out of the stab aug mode, and the aircraft lurched drunkenly down towards the ground. It was a sickening feeling knowing that I was riding a 32,000-pound steel rock that was going to hit the ground without any direction from me.

We touched down on centerline and my initial reaction was that we were

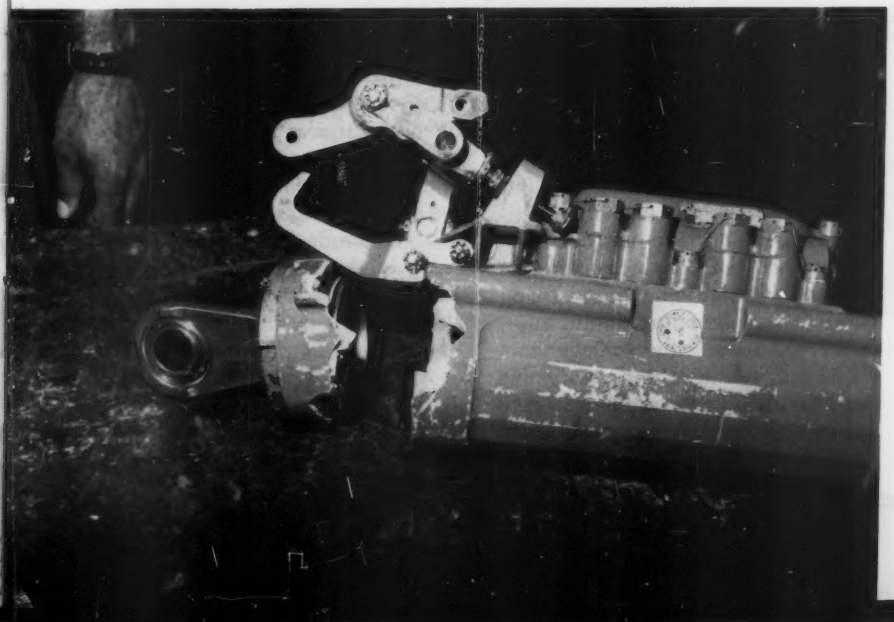


going to be OK. Unfortunately, that was a fleeting sensation as the aircraft began a hard left drift and the right main mount lifted off the ground. Heading off the runway at 155 KIAS with the feeling that the whole aircraft was going to roll over on me was not a pleasant experience. But with Lady Luck smiling on us, we snagged the arresting gear and came to a stop in the grass off the left side of the runway.

The aircraft sustained no damage from its inadvertent departure from the runway. Both of us walked away shaken but unharmed. A thorough inspection of the aircraft revealed that the right flaperon actuator had broken into two pieces. We had been extremely fortunate to get it on deck safely.

Looking back, there **was** one thing I might have done to make this approach less dramatic. After our initial problem with the emergency flaps/slats, we elected to leave them up and risk blowing the gear down at a higher than normal speed. Had we popped the emergency flaps circuit breaker, we might have been able to achieve a slats down configuration, which would have allowed a slower and safer approach speed. Despite all the Intruder hours the Navy had logged, this was a brand new failure for the A-6, one without a specific emergency procedure. Our knowledge of NATOPS, our air sense and good crew coordination helped us through a difficult situation. ◀

A thorough inspection of the aircraft revealed that the right flaperon actuator had broken in two.



Lt. O'Connell is in the Naval Reserve attached to VA 686, the A-6 SAU at VA 42 at NAS Oceana, Va. At the time of the incident, he was an instructor in VA 42.

What They Don't Know Won't Hurt Them. . .

By Cdr. Mike Wilson

AT some point in a naval career, all but the very fortunate leaders face days when things just don't go well in the area of safety. Either he or someone in his charge has dropped the ball, erred, forgotten, misplaced or just plain old screwed up.

The severity of safety-related mistakes can be measured in a number of different ways: cost, administrative time delays, reduced aircraft readiness, extra man-hours, extra expenditures, etc. My perception is, however, that naval aviation leaders often tend to measure the seriousness of their errors by whether or not they have to put themselves on report.

I don't intend to relate my views on how we got ourselves into this situation. Rather, I want to discuss the merits of total honesty and openness in aviation safety incident and accident reporting.

I see three categories of screw ups that move a leader to consider whether or not to put himself on report:

- The minor faux pas that has no wide-ranging or lasting effect, costs little or nothing and can simply be chalked up as a learning experience.
- The serious incident that nearly caused injury or death *but is known to only a few*. This could be tree branches discovered in a main landing gear after the aircraft's return from a flight, a near miss, a momentary excursion off the runway with no damage noted, a "Murphy" installation on a critical aircraft system detected after several flights or hundreds of other examples. In this case, maybe what the chain of command doesn't know won't hurt them (or you).
- The major accident or incident that results in readily observable damage or loss of life. The chain of command will know without you initiating any action.

There's little decision-making in situations falling under categories 1 and 3. Category 2 is the one with all the pitfalls and cold sweats. If handled incorrectly, it will eventually bite you where it hurts the most. The fact that some of us would purposefully withhold safety-related information concerns the hell out of me. And having progressed up the ranks from JO to department head, to XO/CO, I've watched it happen.

I'd like to relate a personal experience which taught me one fine lesson about honesty and openness in aviation safety matters. Some of you may have read the incident report. (Approach, May 1986, Air Breaks). The squadron was just three weeks into a deployment to Sigonella, Sicily, and had already flown over 1,000 hours. A junior but tested crew executed a timely late-night ready launch and were tasked with ASW/surface surveillance during an exercise with the CVBG just west of Sicily. About six hours into the flight on a moonless night, a vector was received from the controlling E-2 that turned the aircraft east.

The flight station and radar operator were occupied in the surveillance role. The TACCO and navigator were tied up encrypting and decrypting all radio transmissions because covered circuits had failed earlier in the flight. On top of all that, the E-2 was giving erroneous vectors to the aircraft, having confused it with another P-3 already on station. The stage was set. The aircraft was operating at 1,500 feet, as the copilot identified what he thought was a cloud. He turned the aircraft to avoid flying through it. Some cloud — it was actually a 2,500-foot mountain off the west coast of Sicily. The aircraft missed it by the smallest of margins — a near

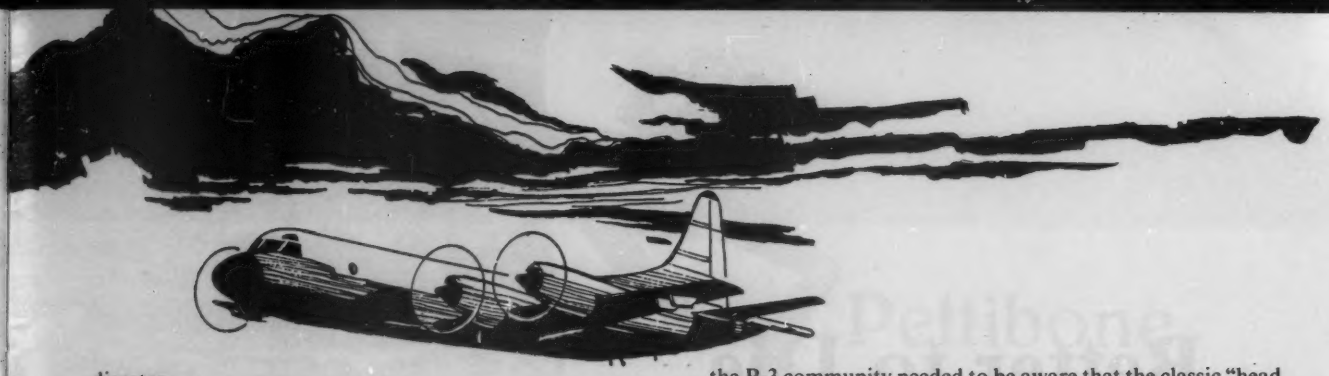
Airbreaks, May 1986

Down the Primrose Path. The P-3 had been in the air for six hours after a hectic but successful Ready One launch. Its mission was to conduct surface surveillance for a carrier battle group. The flight was conducted between 500 and 1,500 feet AGL off the west coast of Sicily. Weather had been marginally VFR but had improved during the course of the moonless night mission. The patrol plane commander (PPC) turned the controls over to the co-pilot (2P) after giving him a thorough brief on position and various call-signs.

An additional player in the unfolding drama was an airborne E-2 acting as coordinator for the surveillance mission, which included another P-3 and various fighter and attack aircraft. The P-3 crew had not been briefed on the E-2 coordination role and experienced difficulty in transferring tactical control due to intermittent communication problems.

As the Hawkeye began assigning vectors, the P-3 crew double-checked position while the 2P turned the aircraft to the initial heading. They were just off the west tip of Sicily. Thirty minutes later, the E-2 gave a second heading, turning the P-3 50 degrees farther east. The 2P dutifully turned to the new heading but did not verify his position with the navigator or radar operator. Everyone in the aircraft was busy working on the tactical problem, and no one correlated the aircraft's position with the surrounding terrain.

After a few minutes, the 2P identified lights on the coast and what appeared to be a large, dark cloud directly ahead of the aircraft. The



disaster.

The crew landed at 0500. I very quickly heard that they had "experienced some problems." Once I learned the entire story, I was taken aback. It was my impression that navigation and terrain avoidance had been solidly stressed in the months that preceded the deployment. Our ORE was most realistic in emphasizing the importance of navigation in the Med environment. Then I debated. Do I call my boss and put myself on report or keep my trap shut and let it all blow over?

For some very good reasons, I elected to immediately let my operational commander and ISIC at home know that we had a very close call. I considered it important that my boss get the straight poop from me rather than back channel gossip. I wanted him to know *from me* the specifics and what I intended to do to keep it from happening again.

The crew was already shaken and demoralized, but I believed it would make matters worse if I looked the other way. They needed to know that the incident warranted my full personal attention and the attention of the chain of command. They needed to know that the next time the gods might not be looking so favorably upon them.

I knew the whole squadron needed to see a quick, positive reaction to a serious breakdown in airmanship and headwork. Turning a blind eye to safety any time breeds disaster. What got this crew into extremis to begin with? I thought we really had our act together after a strong ORE performace, but something was missing. I needed help to identify and define a hidden weak link. We were not the only aviation unit operating in and around mountainous terrain. I believed that the P-3 community needed to be aware that the classic "head up the butt" scenario had just occurred.

Subsequently, several things happened and some things didn't. First, I didn't get fired. I saw a naval career flash before my eyes in the early period following the incident. I knew that the decision to tell the world might be costly. My decision to tell all was correct. The support and good words from my superiors were welcome and uplifting during a tough time.

Next, the incident became a topic of discussion in every VP wardroom. A needed review of NATOPS on low altitude procedures was initiated. The answers I needed to help our crews operate safer came quickly. We beefed up our squadron SOP and improved training plans to better cover previously undetected loopholes in navigation procedures.

Third, the incident crew, crushed at first, quickly rallied and did a fantastic job over the remainder of the deployment. They were survivors and ended up using the slogan "ain't no mountain high enough" as their crew logo!

I'm also convinced that all our aircrews were safer and more conscientious in the air. As the deployment rolled on into operations in the vicinity of Libya, they needed a strong safety foundation to rest on.

The hesitancy to share information on potentially self-incriminating safety-related errors is regrettable. It cuts across every rank, rate or paygrade, from the airman on the deck who loses a tool to the CO who fails to report TFOA. To turn around an old phrase: "To err is human. To confess those errors for the benefit of others is divine." ◄

Attaboy, Skipper — no one could say it any better! — Ed.

Cdr. Wilson is the commanding officer of VP 56, NAS Jacksonville, Fla.

Tactical Coordinator (TACCO) called to say that continuing their current direction of flight would take them over land and through the standoff distances for the exercise. At this point, the 2P called the radar operator and asked him about the dark cloud, but the radar operator didn't answer. The 2P then decided to fly to the right of the cloud, **which turned out to be a small mountain 700 feet above the altitude of the P-3.**

The PPC, still back in the tube, called for the radar to be brought up. The coast of Sicily and two islands came into view on the screen. Meanwhile, the 2P had called for power and began to climb. When things settled down, the P-3 called the E-2 for positional verification. It was only then that the E-2 disclosed it was not receiving this P-3's IFF and that, in fact, its heading calls had been meant for another aircraft!

This familiar scenario continues to plague all communities. It is a major contributor to the multiengine Class A mishap rate. Regardless of your community, this crew's experience points out several areas which may prevent you from becoming a Controlled-Flight-Into-Terrain statistic. The bottom line is this: Stay aware of your position at all times. Do not be lulled into complacency because you are being controlled by another facility or aircraft. Do not hesitate to question another crew member when you see a potentially dangerous situation developing. Crew coordination, so important in developing an effective operational team, is also essential to the safety of the mission — LCdr. John Wilhelm, P-3 analyst, Naval Safety Center. ◄

Better to Die Than Look Bad

By Lt. R.A. Rundle

WHENEVER I try to explain naval aviation to an outsider, I use the quote, "It's better to die than look bad." It not only gets a laugh, but it also describes a subtle and serious truth about naval aviation that all naval aviators intuitively understand. We're a group of specialists who compete in the air, in the ready room, in our ground jobs and on numerous other levels. However, our competitiveness, taken to extremes, carries with it a tragic flaw: ego.

Loss of face can seem to be the equivalent of professional death. If an aviator is so afflicted with this attitude, he may suffer grave consequences.

Recently, one of our JOs found himself in a seemingly innocuous situation. One night, after manning his aircraft and starting engines, he decided to preflight his survival gear. To his dismay, he discovered his PRC-90 radio was missing. He faced the decision we all dread: Should he tell someone and delay or scrub his launch (demonstrating to his peers and superiors that he was something less than ideal), or should he put a zipper on it and tempt fate?

Aviators routinely find themselves in circumstances such as this, which could have far-reaching consequences.

This dilemma is not for the weak of heart but neither is naval aviation. Speaking up when the perceived price is personal embarrassment is the only responsible course of action. It takes guts to make the right decision, but when the consequences are thoroughly considered, there is only one choice. "It's better to die than look bad" is a gallant quip, but it's a tragedy when it really happens. ◄

Lt. Rundle is safety officer for VAQ 132, an EA-6B squadron based at NAS Whidbey Island, Wash., and deployed in USS *Forrestal* (CV 59).

Grampaw Pettibone

The Grampaw Pettibone Award

By LCdr. Dave Parsons

DURING the past 44 years of naval aviation, no other name has been more closely associated with aviation safety than Grampaw Pettibone. The cantankerous Grampaw's rantings and ravings over aviator's misfortunes have lived on in the pages of Naval Aviation News. His origins stem from Captain "Seth" Warner, who believed many aircraft accidents were due to "stupid, 100-percent pilot error." Linking his aviation knowledge and imaginative writing talent with the artistic talents of then reserve Lieutenant Robert Osborn, Capt. Warner gave birth to Grampaw Pettibone, the "sage of safety" and "oldest and wisest" naval aviator. Grampaw found a welcome home in Naval Aviation News, and although Capt. Warner has passed away, Robert Osborn continues to provide his salty-as-ever sketches of Grampaw for Naval Aviation News.

In 1984, Paul Warner proposed that a perpetual Grampaw Pettibone trophy be established in honor of both his father, Capt. Warner, and Robert Osborn. Then Deputy Chief of Naval Operations (Air Warfare), Vice Admiral "Dutch" Schoultz, gave the project his backing and instituted OPNAVINST 3590.19F, which delineated the competition. Paul Warner, meanwhile, commissioned a bronze statue cast in the image of Grampaw Pettibone upon which the names of the annual winners would be inscribed. The first year of competition was 1985, and the award was handily won by VA 27, an A-7 squadron that established an outstanding command writing program that produced over 80 aviation safety articles.

The 1986 Grampaw Pettibone Trophy Competition Award Winners

1st Place

USS *Midway*

Midway takes first place primarily for their original publication, "Flight Deck Awareness — A Basic Guide." The guide was originally compiled and edited by LCdr. Steve Gummer, aviation safety officer for VF 161. This full color production was so professionally done, it was subsequently adapted by the Naval Safety Center for distribution to the entire fleet. Over 30,000 copies have been printed to date. *Midway* also received high marks for the efforts of both Capt. Riley Mixson, CO, and Cdr. Bert Polk, Safety Officer, in encouraging an extremely active safety program that generated articles, poster ideas and awareness well above that of other carriers. To Capt. Mixson, Cdr. Polk, LCdr. Gummer and the men of *Midway* — Well done.

Runner-up

Second Marine Aircraft Wing

2nd MAW gave *Midway* some stiff competition with their "Safety Cookbook," a collection of safety related articles from throughout the wing published in a cookbook fashion. Under Maj.Gen. Richard Cooke, CG 2nd MAW's sponsorship, dynamic Lt.Col. Howard Hoffman solicited and then edited an impressive collection of articles ranging from water survival to seat belts and baby car seats. Its popularity with both Navy and Marine audiences has been overwhelming and is soon to go into a fourth printing. The result has been a revitalized 2nd MAW, which has out-produced all other MAWS in Approach articles in the recent past. Well done, 2nd MAW.

Special Recognition

Hank Caruso, Artist

A special recognition award was made this year to Mr. Hank Caruso, aviation artist. Hank has generously supported both Approach and Naval Aviation News with his highly original and effective artwork, often on short notice and always free of charge. He has also provided artwork to many individual squadrons for no more than a thank you. Gramps knows what he likes and he likes Hank's work a lot. Just ask him!

Well done, Hank, and thank you from both Approach and Naval Aviation News.

AD3 Doyle Ussery (left), Lt. Gregg Bunton (center), Lt. Peter Vanderspek (right).

Lt. Peter Vanderspek
Lt. Gregg Bunton
AD3 Doyle Ussery
VRC 40

While returning to NAS Norfolk on a routine delivery mission from USS *Nimitz* (CVN 68), Lt. Vanderspek (aircraft commander), Lt. Bunton (co-pilot), and AD3 Ussery (aircrewman) felt sudden severe vibrations in their C-1A aircraft. A thorough check of engine instruments, deliberate power and propeller pitch changes, and a visual inspection, all indicated that both engines were running normally. It was determined that the problem was in the tail area of the aircraft. An emergency was declared, and the pilots elected an emergency landing at the nearest available field, a 3,000-foot by 85-foot uncontrolled island runway. A hydraulic rudder assist-off, minimum angle of bank approach would be made.

AD3 Ussery briefed the passengers on the procedures and proper position to assume for the emergency landing. The vibrations had increased in intensity to the point where he could no longer stand unsupported in the cabin. Moving hand-over-hand, he completed the briefings, secured the cabin for landing and returned to his seat.

While decelerating to approach airspeed, the pilots determined that the vibrations increased at slower speeds, requiring a faster than normal landing on the short strip. As they were about to roll-out on final, the rudder jammed completely. Utilizing differential power, Lt. Vanderspek was able to bring the aircraft to within 20 degrees of runway heading while Lt. Bunton reviewed the landing checklist complete.

The C-1A touched down 7 feet from the approach end of the runway at 130 knots. Both engines were secured, and starboard braking was applied to align the aircraft on runway heading. As the roll-out continued, the starboard main mount blew. Full port brake was applied in order to blow the left main mount. The aircraft came to a stop 6 inches from the edge of the runway.

Maintenance investigation revealed that the aft adjustable fitting on the rudder balance tab rod assembly had separated. As the unrestrained trim tab vibrated, the connecting rod eventually fell into a position that jammed the rudder.

Credit for avoiding a potential catastrophe goes to the crew's coordinated efforts, skillful airmanship and sound headwork.

BRAVO ZULU

LCdr. Eric Benson (right).
Ltjg. Amir Khoshbin (left),

LCdr. Eric Benson
Ltjg. Amir Khoshbin
VF 11

Ten minutes after launch from the ship on a night mission, Ltjg. Khoshbin (pilot) and LCdr. Benson (RIO) were told by their joining wingman that "heavy smoke" was coming from the port engine of their F-14. Quick troubleshooting revealed that the port variable-area exhaust nozzle had failed in the open position and that the "smoke" was in reality fuel streaming from the engine.

Ltjg. Khoshbin quickly secured the engine and pulled the fuel shut-off handle in accordance with NATOPS procedures for a fuel leak. Shortly thereafter, the vertical display indicator (VDI), which is the primary attitude indicator, and the cockpit angle of attack indexers (which provide approach speed cues) also failed. The aircrew now faced the reality of a single-engine night carrier approach using a gyro the size of a silver dollar with diminished "on speed" approach cues — a situation that would quicken the pulse of even the most seasoned F-14 aircrew. Ltjg. Khoshbin, with the professional assistance of LCdr. Benson, handled this dangerous compound emergency by the book, skillfully piloting his crippled Tomcat to a single-engine OK four wire.

Continued

LCdr. Alan Thurman
Lt. Dave Grim
AMHC Tom Schuchhrdt
AD1 Jim Arnolts
VXE 6

LCdr. Thurman and his three-man crew picked up their LC-130R from SDLM for an acceptance flight. They received an in-depth brief on the work completed on the aircraft. After examining the paper work, they conducted an extensive preflight, particularly on all items worked on during the overhaul. The crew briefed they would abort the takeoff for anything that appeared abnormal or unusual, even if it did not meet the regular abort criteria.

The Hercules took the runway, and power was set holding the brakes with all indications normal. As he began the takeoff roll, LCdr. Thurman added the usual right rudder. At about 40 knots, he added more right rudder and right aileron to the correct a slight left-wing down attitude that was becoming more pronounced. At 70 knots with full right rudder and full right aileron, LCdr. Thurman aborted the takeoff.

As the aircraft slowed, the left-wing down attitude abated. The crew taxied clear of the runway to investigate and determined that the ailerons had been rigged *backwards!* There is no requirement to visually check flight control deflection in the LC-130 NATOPS since none of the surfaces can be seen from the cockpit. There was also no documentation that work had been done on the control yokes or control surfaces.

The implications of this incident are frightening. Had LCdr. Thurman not needed any aileron correction on takeoff, he undoubtedly would have gotten the aircraft airborne which would have almost certainly resulted in a catastrophic mishap, including the possible loss of the aircraft and all four crewmen. Get-home-itis could have caused this crew to press on. But they didn't. They let their safety-first attitude prevail.

Lt. Matthew S. Pasztalaniec
VA 122

Lt. Pasztalaniec was flying a DACM training sortie over the Salinas Valley of eastern California. In a nose-low slice turn accelerating through 480 KIAS, he saw the master caution light in his A-7E illuminate and the oil quantity "flipflop" gauge indicate one-half. As he complied with the NATOPS immediate action emergency procedures, i.e., setting the power and deploying the EPP (Emergency Power Package), the oil quantity indicator dropped to low, and the oil pressure gauge decreased rapidly toward zero. With his wingman providing assistance, Lt. Pasztalaniec declared an emergency and started towards Naval Air Facility China Lake, more than 60 miles away.

With the power set at 83 percent and cockpit instruments indicating zero oil in the aircraft, Lt. Pasztalaniec nursed his crippled A-7 into position for an emergency precautionary approach and arrested landing. As the landing gear and flaps extended, engine performance began to deteriorate dramatically with continuous compressor stalls, severe airframe vibrations, rising engine turbine outlet temperature and decreasing RPM. He was still three miles from the runway.

Checking his airspeed and altitude, he decided to remain with the aircraft. Holding his power until sure of making the runway, he touched down on the approach end at approximately 180 KIAS. When the aircraft hook skipped the short-field arresting gear, Lt. Pasztalaniec applied maximum braking and engaged nose gear steering to counter a rapidly developing right drift. The aircraft safely engaged the long-field arresting gear and came to rest approximately 25 feet right of centerline. Post-flight inspection revealed engine oil starvation.

Have you "riven" a Ford recently?

An Accident Wanting to Happen?

By LCdr. Terry Toms

REMEMBER when aircrew accident potential was measured in life event points? Various events, ranging from major life style changes to seemingly trivial occurrences, were assigned values on a scale of 1 to 100 according to the amount of stress they induced. A smile from the CO might be plus 50; losing a big dice roll at the club perhaps a one, unless the whole air wing was in, in which case you got lots of negative points due to major financial problems. When the point total of these positive and negative events reached three digits, aircrews were considered more prone to inattention and subsequent bending or breaking of the squadron's high-speed training aids.

The system appeared to be basically good gouge, but it failed to acknowledge that a typical department head was starting a good day at plus 500 points while the average JO was operating at minus 10. Still, from a safety standpoint, it highlighted major life changes that make an aviator less than a full up round. In my younger days as an FRS instructor, I witnessed a classic example of the impact (almost literally) of flying with a full load of personal problems on your back.

An instructor pilot (IP) and I were scheduled for a truly high value hop during an FRS weapons detachment. Our A-6 was light-loaded and configured with four pods of 2.75-inch WP rockets. It was a dream mission — fast-FAC for a flight of replacement crews conducting high-threat close air support. Roaming the desert and shooting up old truck hulks is a great way to spend an afternoon.

My IP seemed especially enthusiastic. Things hadn't been going well for him lately. A superb stick and former fleet squadron mate, he had just experienced a rather unexpected divorce. He was also in the midst of a major career decision. Most of his friends had noted a significant personality change since the divorce. He had thrown himself into his second bachelorhood with gusto. His all-night hunting trips, in search of fun and companionship, were becoming legendary. Once or twice, they terminated with his car making a full-stop landing in a ditch.

The candle was burning at both ends and smoldering in many other places. He seemed intent on creating an image of the "aviator stud," who excels in the squadron and then spends his nights in a bogey-rich environment conducting one versus many engagements. We titled it "the search for coolness" and hoped for the best. Unfortunately, it began to intrude on his airplane driving.

I knew it was going to be one of those days as our rocket-laden "buff" lifted off. The landing gear came up, and we went down, wowing the tower with a 10-foot-low transition the length of the runway. After checking the slats for sagebrush, I made a low-key but pointed remark about my pilot's ancestry and his relationship with his mother. I was informed that my "low macho" warning light was on.

Arriving on the target range, we commenced beating up on old trucks with our 2.75s. The rush of dealing death and destruction, however, was soon replaced with continual ground rush. The dive angles were getting steeper and shooting altitudes lower. I commented that we were pressing too low and was advised to apply for a sex change operation.

The next run almost changed my medical needs to an autopsy. Once again we were steep and well past the pre-planned pickle altitude. As the rocket left the pod, I yelled *"Pull"* and committed the truck's serial number to memory. We bottomed out through the explosion plume of the rocket at an altitude I prefer not to remember.

Further fun, a proposed fly-by, was precluded by a hung rocket and rapid return to base. Postflight inspection of our trusty bomber was highlighted by the discovery of a piece of truck shrapnel embedded in the No. 4 wing pylon. The TACMAN doesn't discuss the frag pattern of a '52 Ford, but I assume it's quite low.

I discussed the flight with the detachment O-in-C and our friendly neighborhood flight doc. Actions were taken, and my friend eventually returned to his normal professional self, much to everyone's relief (particularly the B/N's!). I still tell him he was the prime mover in my pilot transition request.

Adding up life event points might not provide a precise and scientifically sound measure of an aviator's susceptibility to brain lock. The basic principle, however, has a lot to offer the supervisory chain. Danger signals transmitted by behavioral changes in conjunction with major events have to be acknowledged. Knowing your people, and what is going on in their lives allows the supervisor to step in and interrupt a trend before it leads to a mishap. Nothing is sadder than standing in a smoking hole saying "if only I had said something." ◄

LCdr. Toms, currently the operations officer of VA 95, began his career as a B/N in VA 95 and 128. Following pilot transition, he returned to VA 95.

TRUST

By LCdr. D.T. "Tex" Keuhlen

WE naval aviators *have* to trust people. It's inherent in the business. My plane captain, the maintenance chief, flight lead, all of these people have my trust. Of course, I still read the Aircraft Discrepancy Book and preflight the aircraft. I keep an eye on lead to make sure he doesn't fly me into a mountain. But I feel confident in these people. I know they're experienced, knowledgeable and well-trained.

The problem is that sometimes it's easier to trust than double-check. That's when things get dangerous.

My Fam 3 replacement pilot and I were taking an E-2C up for a PMCF, dual-engine punch-out. My co-pilot had never seen a prop at parade rest so he was somewhat anxious. The brief was thorough. QA gave us their usual inputs, describing all the maintenance performed since this bird had last flown (some 40 days before) including pulling the tail to repair cracks. Due to the extent of the work, our cockpit brief was extremely thorough and covered every possible emergency that I could think of.

In maintenance control we reviewed the ADB (copyright 1985). The plane captain said the aircraft was ready; the senior chief gave me a thumbs-up, and I signed on the dotted line. Preflight was normal but took a long time; start and taxi were a piece of cake. This bird wanted to fly.

After a quick rebrief on emergencies, we took the duty and departed the field. Our departure corridor always had major problems with hang gliders, hot-air ballons, ultra-lights and light and heavy civil traffic going in and out of the airports around us. That's what happens when your corridor takes you right over the top of infamous Black's Beach. Basically, whether or not Departure Control called traffic for us, we always had our eyes peeled for the little guys. Lookout doctrine was the same for the warning areas, even though we had a controlling agency keeping tabs on all aircraft.

The PMCF went 4.0. Maintenance had done a good job. I relaxed a little now. I was flying a known quantity instead of an aircraft with an ADB that read like "War and Peace."

Pedal to the metal, we were inbound, talking to Approach and looking for little guys. We were handed off to tower at six miles, doing max warp. Nothing left to do but demo a S.H. break to my stud. Tower said break at the numbers; my traffic was an F-14 on short final. By now I was concentrating on the break. I was almost home, and lookout doctrine took a back seat. I mean, this was homeplate, tower-controlled airspace; these *trusted* guys were looking out for me! Right?

At the numbers, quick look left, clear, 60 degrees angle of bank, slap the power levers to flight idle (hope those guys at the hold short see this), maintain altitude, gear, flaps and max rudder.

"Tower, Cyclone at the 135, three down, full stop." Let's see, tower said winds 270, better let out a little AOB so I don't overshoot.

That's when I first saw him. As I lowered that starboard wing to about 45 degrees AOB, he appeard in the co-pilot's window. It was a light civil, single-engine, about 30 yards on the nose, co-altitude, slight right-to-left drift. Had the wind been down the runway, I never would have made it. I added full power, stomped full right rudder and rolled from 45 degrees left to 60 degrees right. Rudder shakers came on, but I was too busy to check AOA. He passed down my port side by less than 20 feet.

The pilot was middle-aged, slightly bald, with white hair, and wearing a white shirt and a Plectron headset. He took no evasive action and later stated he never saw me. This whole incident occurred less than one-fourth of a mile from the approach end of the runway at pattern altitude. I tried to call tower to warn other aircraft in the pattern, but all that came out were expletives. An F-14 RIO who saw the whole thing said he thought that we had hit.

Once on deck, the shock set in. I had *never* come that close before. The debrief was extensive, and included phone calls and a message. It turned out the tower had cleared a local news-watch aircraft through the pattern on VHF, but forgot to tell me or call him as traffic. The pilot was watching the highway and reporting road conditions.

So, who was at fault? I figured it came down to 50/50. I blindly trusted, instead of using my Mark I, MOD 0 eyeball as a cross-check instrument. Tower had said my only traffic was on short final. No one was doing touch-and-go's or FCLPs. The thought of meeting someone in the pattern had not even crossed my mind.

In aviation, there are times we must blindly trust. Rolling across the ramp, you must trust the gear is in battery (but be ready in case it isn't). We'd go crazy if we had to worry about all these things, and performance would go out the window. But 95 percent of the time you can cross-check the trust you've given the controller, the tower supervisor and the maintenance troubleshooter. Locked up at three miles, does your TACAN agree with CATCC's call? Cross-check! Your signal is BINGO, hook up, gear up, pigeons are . . . cross-check your CAINS.

And the next time you hear, "cleared to break, patterns yours," trust, . . . but the ultimate responsibility is yours. Personally, I will *always* check, no matter what they tell me.

LCdr. Keuhlen is an E-2 instructor and the AIRPAC NATOPS evaluator at VAW 110, NAS Miramar, Calif.

Never Give Up Fighting For Centerline

By Lt. Donald G. Seybold

THE day started with an early preflight and a 0600 takeoff for a P-3C reposition flight from WESTPAC. En route the crew was to remain overnight for refueling and crew rest. Weather forecasts were excellent, and the aircraft was performing well.

After one hour of flight, the low-pressure fuel filter's caution light for the No. 4 engine illuminated, indicating a possible restriction of fuel flow in one or both of the low-pressure filters. Per NATOPS, the No. 4 engine was monitored for normal operation and left on-line.

The flight station discussed possible divert fields and opted for NAS Cubi Point since all the necessary maintenance could be accomplished there. The flight plan was changed, and Cubi Point operations was notified of the crew's arrival time so minimum time would be spent on deck.

An hour before landing, the crew dumped 5,000 pounds of fuel to get below the maximum landing weight of 114,000 pounds. The airspeeds for a landing at 112,000 pounds were 152 KIAS at approach flaps and 137 KIAS at land flaps. The patrol plane commander (PPC) elected to make an approach flap landing since he felt more comfortable controlling the aircraft and minimizing the rate of descent at touchdown in that configuration.

Ground roll distances for both configurations were calculated. Only 500 feet had to be added for approach flaps. During the landing brief, the copilot was instructed that reverse thrust would not be applied until after he announced "below 135 KIAS."

Radar control vectored the aircraft for a straight-in approach to Runway 7. The winds were calm, OAT 88 degrees Fahrenheit, and the visibility was unrestricted. The aircraft touched down smoothly 1,500 feet past the approach end of the runway, and the power levers were retarded to flight idle.

At 130 KIAS the copilot called, "Below 135 KIAS." As the PPC brought all four power levers up and over the ramp and retarded them into reverse, the flight engineer reported a flameout on the No. 3 engine as the RPM dropped below 70 percent. The PPC called "Feather number three" and began to correct for the swerve with asymmetrical reverse applications. Shortly after the No. 3 engine was feathered, the flight engineer reported a flameout of the No. 2 engine as the RPM passed through 50 percent. At 80 KIAS, the PPC employed nosewheel steering, braking and reverse thrust to maintain directional control. The flight engineer was told to feather the No. 2 engine. As soon as he did that, *unbelievable as it may seem, the No. 4 engine flamed out.* With the loss of No. 4 the aircraft lost all electrical and hydraulic power.

With aircraft controls locked and nosewheel steering inoperative, the aircraft began to veer left towards the edge of the runway. The PPC applied hard right wheel braking, but the swerve continued. In an attempt to regain control, he directed the flight engineer to shift boost out; the flight engineer instinctively pulled all three axis handles and energized the emergency DC hydraulic pump.

The edge of the runway quickly approached, with nothing but grass, embankment and water in sight. The PPC told his copilot to help in applying hard right wheel braking and advanced the No. 1 power lever into flight range. This combination of actions was enough to stop the swerve and bring the aircraft to a safe stop, on centerline, approximately 1,200 feet from the end of the runway. The auxiliary power unit was brought on-line, and an emergency call was made to the control tower.

Tower personnel told the crew that smoke was coming from the right wheel area and the crash crew was on the way. The PPC secured the No. 1 engine. The crew evacuated via the port overwing exit. With the crew mustered well behind the aircraft, the crash crew chief informed the PPC that the smoke was from hot brakes and not a brake fire. Postflight inspection revealed that the only damage to the aircraft was a broken nosewheel steering cable that snapped when the aircraft lost electric and hydraulic power.

Postflight maintenance revealed that the engine efficiencies were marginal but within limits: No. 2 — 96.0 percent, No. 3 — 95.4 percent and No. 4 — 96.5 percent. Possible factors causing the flameouts were high temperature, high humidity, airspeed and low engine efficiencies. However, no engine malfunctions were discovered.

In retrospect, it is clear that the pilot should have used a full flap landing instead of an approach flap landing; this would have allowed for the slowest landing speed and the shortest possible ground roll distance. All flight station personnel should be aware that with low engine efficiency, high ambient temperature and high humidity, the possibility of compressor bog-down increases even with a normal power lever reversal.

With a compound emergency on the runway, no time is left to refer to NATOPS or take the aircraft around for another approach. Quick thinking, correct NATOPS procedures and good headwork make the difference between being on or off the runway. When the situation looks hopeless, never give up. Keep fighting for the centerline. ◄

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